

**EPA Superfund
Record of Decision:**

**BELL LANDFILL
EPA ID: PAD980705107
OU 01
TERRY TOWNSHIP, PA
09/30/1994**

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EPA Superfund
Record of Decision:

Bell Landfill Superfund Site, PA,
9/30/1994

RECORD OF DECISION

BELL LANDFILL SUPERFUND SITE
TERRY TOWNSHIP
BRADFORD COUNTY, PENNSYLVANIA

SEPTEMBER 30, 1994

DECLARATION

SITE NAME AND LOCATION

Bell Landfill Superfund Site
Terry Township
Bradford County, Pennsylvania

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the selected remedial action plan for the Bell Landfill Superfund Site (the "Site") in Bradford County, Pennsylvania which was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), as amended by the Superfund Amendments and Reauthorization act of 1986, 42 U.S.C. [Para] 9601 ("SARA"), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 C.F.R. Part 300. This decision is based upon and documented in the contents of the Administrative Record. The attached index identifies the items which comprise the Administrative Record.

The Commonwealth of Pennsylvania concurs with the selected remedy.

ASSESSMENT OF THE SITE

Pursuant to duly delegated authority, I hereby determine, pursuant to Section 106 of CERCLA, 42 U.S.C. [Para] 9606, that actual or threatened releases of hazardous substances from this Site, as specified in Section VI, Summary of Site Risks, in the ROD, if not addressed by implementing the response action selected, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The remedial action plan in this document is presented as the permanent remedy for controlling the soil and groundwater contamination at the Site. This remedy is comprised of the following components:

- @ Capping two fill areas with a Pennsylvania Department of Environmental Resources ("PADER") municipal landfill cap.
- @ Reconstructing the existing leachate collection system, and collecting leachate in new storage tanks for off-site treatment and disposal.
- @ Deed restriction preventing residential use of the Site.
- @ Removing visibly stained soils from the areas impacted by leachate (followed by confirmatory sampling), and placing these soils in areas to be capped.
- @ Long-term monitoring of ground and surface water.
- @ Landfill gas venting system.

STATUTORY DETERMINATIONS

Pursuant to duly delegated authority, I hereby determine that the selected remedy is protective of human health and the environment, complies with Federal and State requirements that legally are applicable or relevant and appropriate to the remedial action, and is cost-effective. The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable, and satisfies the statutory preference for remedial actions in which treatment that reduces toxicity, mobility, or volume is a principal element.

Because this remedy will result in hazardous substances remaining on site above health-based levels, a review will be conducted within five (5) years after the commencement of the remedial action to ensure that human health and the environment continue to be adequately protected by the remedy.

9/30/94

Peter H. Kostmayer
Regional Administrator
Region III

Date

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FOR

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RECORD OF DECISION

Bell Landfill Superfund Site
Terry Township

Bradford County, Pennsylvania

September 30, 1994

I. INTRODUCTION

The Bell Landfill Superfund Site (the "Site") is located in Terry Township, nine miles southeast of the town of Towanda, in Bradford County, Pennsylvania. The Site consists of approximately 33 acres of land situated in a rural, sparsely inhabited area. It is accessible via Parker Road, a township road located between the villages of New Era and Evergreen. The location of the Site is shown on Figure 1.

The Site is approximately rectangular in shape with its long axis oriented north-south. Parker Road runs along the southern boundary of the Site, while the northern boundary is an open cornfield. The eastern and western boundaries of the Site are two parallel tributaries to Sugar Run (a creek). There is a small pond at the southeastern corner of the Site. To restrict entry, the Site is surrounded by a seven and a half foot high woven chain link fence.

Most of the Site is situated on the southern flank of a low hill that is partly forested. Two fill areas are covered with tall grass, and are flanked from the north by sparsely vegetated borrow areas. From the access road the Site appears similar to the surrounding woods and pastures. Land use in the area surrounding the Site is primarily agricultural and residential. The population in the area is sparse. There are approximately 99 residents living within a one mile radius of the Site.

Three small emergent wetlands are located within the Site boundaries. One is found at the monitoring pond located south of the lined area. The other two are located within depressions north of the fill areas that appear to be an old borrow area. There is also one small forested wetland on the southeastern corner of the site that resulted from a seep near the unlined landfill leachate collection pit.

There are no threatened or endangered species presently known to be indigenous to the area of the Site. There are no wildlife refuges, state forests or state game lands located on the Site. The abundance of sparsely populated areas, mostly woods and pastures, around the Site, however, creates a good game habitat.

<Figure>

II. HISTORY OF WASTE DISPOSAL

Aerial photographs taken in the 1950's reveal that the north-central portion of the Site appeared to be heavily wooded and the southeastern portion of the site was mostly pasture or grazing land. The photographs also show plowed fields adjacent to the north, east, and west boundaries.

In 1967, Terry Township leased the property from Wayne and Walter Gowin and began to dispose of household garbage at the Site. This action was taken in response to residents' requests for a centralized place to dispose of refuse and garbage. The township operated the open dump for municipal trash until 1969. At that time the township, unable to meet Pennsylvania Department of Environmental Resources ("PADER") sanitary disposal requirements, ceased its activities.

In August 1973, Herbert Bell leased the Site property from the Gowins and began operating a dump. On March 14, 1975, Mr. Bell purchased thirty-three (33) acres of the Gowin property, including the 10 acres previously leased from the Gowins in August, 1973. Mr. Bell began disposing waste on the Site in an area of approximately 3 acres in the southeastern portion of the Site. This area, shown as the "unlined fill area" on Figure 2, was operated as an unpermitted landfill from 1973 to 1975. On September 5, 1975, PADER issued a solid waste permit for the unlined fill area for the disposal of primarily municipal waste. Waste disposal continued in this area until 1978 when PADER issued an order to cease operations in the unlined fill area.

In the same year, Mr. Bell obtained PADER's approval to construct a lined landfill cell. This part of the Site is referred to on Figure 2 as the "lined fill area". As part of the permit for the lined area, Mr. Bell was required to close the unlined fill area and install a leachate collection system. He capped the unlined fill area with a thin layer of native soil and constructed a drain leading to an eastern collection tank.

The lined fill area was constructed in 1978 and operated until August, 1981. This landfill cell was constructed by partial excavation of the land surface, compacting this new sub-grade, and lining the sub-grade with an asphalt stabilized base. An excavated trench with a Poly Vinyl Chloride ("PVC") pipe was placed at the low end of the liner to collect leachate. This collection pipe was connected to the western leachate collection tank. Another PVC pipe was placed beneath the cell liner to monitor leachate leakage. This monitoring pipe drains to a monitoring pond downgradient of the lined fill area. The landfill was permitted and used for the disposal of municipal waste as well as nonhazardous, industrial, residual waste. In addition, the landfill was approved and used for the disposal of industrial wastewater treatment plant sludge.

<Figure>

The owner/operator of the landfill, Herbert M. Bell, died on October 6, 1980. Mr. Bell died intestate and his wife, Olivia M. Bell, was named Administrator of his estate and kept the landfill open after his death until instructed by PADER to initiate closure of the landfill in 1981. In August, 1981 PADER issued closure and post closure procedures which were to be followed at the site due to improper landfill operation and numerous permit violations for improper cover material and inadequate maintenance of the leachate collection tanks. As part of closure, the owner/operator capped the disposal area with native soil. No known waste disposal has occurred subsequent to closing the lined landfill in 1981.

Currently, there are several leachate seeps that originate from both the unlined and lined waste disposal areas. Brown and orange seeps have stained the soil and appear to have weakened vegetation. In addition, there are several seeps connected with the leachate collection system:

- @ Leachate from the unlined fill area overflows onto the ground from the leachate collection drain line upgradient of the eastern leachate collection tank.
- @ Leachate from the lined fill area overflows from the western collection tank.
- @ The monitoring pond, located in the vicinity of the lined fill area emits a foul odor (similar to leachate in the lined area) and overflows at the southwest corner of the Site.

III. RESPONSE ACTIONS BY EPA AND PADER

Contaminant releases related to the Site were initially identified in November, 1979 after nearby residents complained of leachate running off the site into nearby surface water. This resulted in an initial inspection and sampling of the Site by EPA in February and May of 1980. During an inspection on July 30, 1980, a PADER official discovered approximately fifty (50) drums, approximately half of them filled with unidentified chemicals. The drums were determined to have come from GTE-Sylvania (currently known as Osram Sylvania, Inc.). Upon information and belief, GTE-Sylvania is thought to have made arrangements to have these drums packaged and removed from the Site.

In 1984, EPA and PADER began a Preliminary Assessment/Site Investigation ("PA/SI") including laboratory analysis of leachate and residential well water samples. In September 1986, EPA completed the PA/SI of the Site. Following further site investigation and additional related studies, EPA proposed the Site for inclusion on the National Priorities List ("NPL") of Superfund sites on June 16, 1988. After a public comment period, EPA placed the Site on the NPL on October 4, 1989, 54 Fed. Reg. 401015.

On February 11, 1991, EPA and three Settling Companies ("SCs"), E.I. DuPont deNemours & Company ("DuPont"), GTE-Sylvania Corporation ("GTE"), and Masonite Corporation ("Masonite") entered into an Administrative Order by Consent ("AOC"). The SCs agreed in the Order to conduct a Remedial Investigation/Feasibility Study ("RI/FS"), with EPA and PADER oversight, of the entire Site in accordance with the applicable provisions of CERCLA.

To streamline the RI/FS process and prioritize leachate discharges, EPA divided the Site into two Operable Units ("OUs") known as OU-1 and OU-2. OU-1 comprised the two fill areas and their associated leachate collection drains and tanks. OU-2 addressed the rest of the Site. The RI/FS Work Plan for OU-1 was approved on July 30, 1992 and the RI/FS Work Plan for OU-2 was approved on August 18, 1992.

The RI field work started in September 1992. In November 1992 sampling for both Operable Units was almost entirely completed. Because the draft RI/FS Report for OU-1 (December 1992) dealt with the major environmental issues associated with the Site (leachate management and closure), and because field activities

for OU-2 were proceeding ahead of schedule, both EPA and the SCs agreed to re-combine the Site into a single operable unit and produce a single Risk Assessment ("RA"), Feasibility Study ("FS"), and Record of Decision ("ROD") for the entire Site.

The SCs submitted the results of the OU-2 investigation as the RI Report Addendum One ("Addendum") on March 19, 1993. EPA approved both the RI Report and the Addendum on December 16, 1993. Following this study, EPA completed the site-specific Human Health Risk Assessment ("HRA") and the Ecological Risk Assessment ("ERA"). The Feasibility Study was submitted on July 7, 1994.

IV. PREVIOUS SITE INVESTIGATIONS

@ Site Identification by EPA: 1979 and 1980

After an initial site inspection, EPA suspected that a faulty leachate collection system may have contaminated surface and ground waters at the Bell Landfill Site. A Preliminary Assessment was performed in February and May, 1980. Sampling taken during the Preliminary Assessment revealed the presence of both trichloroethane (TCE) and cadmium in a farm pond, and cadmium in leachate. Sampling also revealed the presence of cadmium in a home well.

@ PADER's Drinking Water Evaluation in 1983

PADER tested eight (8) residential wells located downgradient of Bell Landfill. PADER found that manganese and iron levels were slightly above "the recommended levels for public drinking water supplies". PADER noticed the degradation of surface waters downgradient of the landfill.

@ NUS Corporation in 1984

In December 1984 NUS Corporation conducted a site inspection for EPA. The predominant compounds in leachate samples were methylene chloride, ketones, and phenols. Pentachlorophenol, which was not present in the leachate samples, was detected in residential wells. No Volatile Organic Compounds ("VOCs") or Semi-Volatile Organic Compounds ("SVOCs") were detected in surface water samples.

@ Private residents in 1984

Eight (8) residents sent water samples to three selected laboratories to evaluate contamination of water in their wells along with samples from a farm pond and Messersmith Creek. The only compounds detected (at low ppb detection limits) were: phenols, phenanthrene, phthalates, fluoroanthrene and pyrene. Inorganic analysis revealed slightly elevated levels of iron and manganese in the drinking water.

@ PADER's Aquatic Biological Investigation in March 1985

Chemical and biological samples were collected from six (6) locations (five taken from a stream and one from the farm pond). The observed chemical quality of the stream samples was good. Aquatic life in the stream indicated good stream conditions. Landfill leachate, however, reduced the oxygen concentration in Master's pond and therefore accelerated eutrophic conditions of this habitat.

@ NUS Corporation in 1989

NUS Corporation collected Target Compound List ("TCL") samples from two leachate seepages, one on-site well, and four residential wells. The leachate samples consisted of the mixture of ketones, chlorinated hydrocarbons, and aromatics typical for municipal landfills. The on-site well sample revealed the presence of VOCs. The samples taken revealed that drinking water in the residential wells was within the Safe Drinking Water Act standards, 42 U.S.C. [Para] 300(h).

V. REMEDIAL INVESTIGATION

The Bell Landfill Settling Companies retained Environmental Resources Management, Inc. ("ERM") to conduct the RI pursuant to the Administrative Order by Consent entered into between EPA and the SCs. The primary objective of the RI was to collect the information necessary to select remediation for the Site. The RI included information on the following: leachate, soil, groundwater, landfill gas sampling, geophysical investigation, aquifer testing, residential well sampling, and an ecological survey.

LEACHATE INVESTIGATION

Leachate is a liquid that results from rain water collecting contaminants as it trickles through wastes. This liquid may appear at the ground surface in the form of leachate seeps. Leachate samples from seeps and collection tanks were analyzed. Leachate from the Site contained a mixture of ketones, aromatics, chlorinated hydrocarbons, and heavy metals. These contaminants are similar to leachate generated from typical domestic refuse. Leachate analytical results from the lined and unlined areas are presented in Tables 1 and 2. Locations of leachate and surface soils samples are presented in Figure 3. Leachate from the lined fill area was more concentrated and more acidic than from the unlined fill area. However, the differences can be explained by the age and degree of decomposition of the waste, and also by the presence of red sludge (industrial waste) in the lined fill area.

A geophysical investigation consisting of an electromagnetic conductivity survey was conducted to characterize the lateral extent of both fill areas. Further investigations were performed to locate the drain line, and to determine its extent and condition. Results of the surveys enabled ERM to estimate the volume of refuse at 59,600 cubic yards for each portion of the landfill; and the rate of leachate generation: 2.6 gallons per minute ("gpm") from the lined area, and 3 gpm from the unlined area. The survey of the leachate collection system included leachate drains and two tanks. The collection drain was uncovered and marked, and the lateral extent of both fill areas were delineated.

LANDFILL GAS SURVEY

To evaluate explosion hazards caused by the decomposition of landfill wastes, ERM performed monitoring for methane (a common landfill gas) and for total VOCs. Methane and VOC concentrations were measured around the perimeter of each fill area. Only 7 out of 18 sampling locations revealed concentrations above 1,000 ppm. The concentration above which methane becomes explosive is 53,000 ppm. Therefore, there is not a current threat of explosion from on-site gases at the Site.

<Figure>
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SOIL CONTAMINATION

To characterize the surface soil contamination and determine background levels, ERM collected samples from areas impacted by leachate seeps, along the leachate flow paths, and from the areas where crushed debris were found. Samples were also taken from the points where leachate overflowed onto the ground surface from the leachate collection tanks. Background surface soil sample BGSS-1 was collected from a wooded area near the northern fence line. Sample results are presented in Tables 3, 4, 5, and 6. Locations of leachate and surface soil samples are presented in Figure 3. As anticipated, samples collected close to the leachate seeps contained many of the same constituents found in the leachate. Samples collected further from leachate seeps had lower VOC concentrations. Concentration of VOCs decreased as the distance from the leachate seeps increased. However, the concentration of metals, which were elevated above background in areas impacted by leachate seeps, did not decrease with distance.

Two areas where crushed drums ("drum area") and bulldozed debris ("debris area") indicated different soil contamination patterns were investigated. Samples from these areas revealed elevated levels of metals, PAHs, and the presence of DDT.

GROUNDWATER QUALITY

EPA has established several class types for groundwater aquifers using the following criteria:

<Figure>

EPA has classified the affected aquifer at the Bell Landfill Site as a Class IIA aquifer, a current source of drinking water, in accordance with the EPA document "Guidelines for Groundwater Classification" (Final Draft, December 1986).

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Six (6) bedrock monitoring wells were installed to evaluate ground water quality and to provide

information on the site-specific geology. Information from well logs indicated that the Site is underlined by alternating beds of sandstones, siltstones, and shales. The site hydrology is characterized by groundwater flow within limited water-bearing fractures resulting in low yielding wells. Two of these monitoring wells were used to perform a slug test. This test is used to characterize hydraulic properties of the aquifer in the vicinity of the landfill. The test showed low hydraulic conductivity, and confirmed the existence of a low-yielding bedrock aquifer. The northern portion of the Site serves as a ground water recharge area. The eastern tributary serves as a main ground water discharge point. There is also a smaller component of ground water flow discharging to the western tributary. These conditions cause the majority of groundwater to flow from northwest to southeast, and a smaller portion of groundwater to flow from north to northeast.

Locations of the on-site monitoring wells are presented in Figure 4. Groundwater analytical results are presented in Tables 7 and 8.

Samples from wells located downgradient of the unlined fill area revealed above background concentrations of VOCs, primarily chlorinated hydrocarbons (5 ppb of vinyl chloride, 8 ppb of perchloroethylene ("PCE"), 32 ppb of TCE), and minor amounts of aromatics and one ketone. The concentrations of metals were within the drinking water standards; however, there were some trace amounts of arsenic and elevated concentrations of calcium, magnesium and manganese. No pesticides or PCBs were detected.

Five (5) residential wells were sampled. Samples from two of these wells revealed levels of manganese elevated above background. One well was found to have above-background levels of arsenic, and another well contained both arsenic and bis(2-ethylhexyl)phthalate. However, there is no evidence that the residential water contaminants are site-related, especially since iron, an indicator of leachate contamination, was not elevated above background in four of the five sampled wells. As with the samples of wells located downgradient of the unlined fill area, no pesticides or PCBs were detected in the residential wells.

STREAM SURVEY RESULTS

Surface water and sediment samples were collected from eight (8) sampling points, called "stations". Seven stations were located along the western and eastern tributaries; one station was located at the farm pond. Surface water, sediment and macroinvertebrate sampling locations are presented in Figure 5. Surface water analytical results are presented in Tables 9 and 10.

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Some of these samples, especially those from the pond, indicated lower dissolved oxygen concentrations causing some acceleration of eutrophic conditions of this pond. This could be related to leachate discharges. The results of the surface water analyses indicate that site-related contaminants had no impact upon the surface water. Methylene chloride was the only VOC compound present in the samples and it was detected only once. Similarly, bis(2-ethylhexyl)phthalate was the only detected SVOC, and methoxychlor the only pesticide. Each of these were detected at only one station (sampling point). Of the six metals detected, the difference between upstream and downstream stations, except for sodium, was within one order of magnitude. Therefore, the observed water quality of streams did not appear to be impacted by the Site.

Additional contaminants were detected in the sediment samples: five VOCs (including carbon disulfide and methylene chloride), six SVOCs (including pyrene, benzo(a)pyrene, benzo(b)fluoranthene, fluoranthene, and phthalates), three pesticides, and twenty metals. All of the sample concentrations were within an order of magnitude of each other, and the samples from the farm pond indicated the highest concentrations.

ECOLOGICAL SURVEY

Living organisms inhabiting the tributaries and pond indicate water contamination which is similar to the laboratory analytical data. Some of these organisms (macroinvertebrates), present diversity and abundance levels proportional to the cleanliness of the water. At the Bell Landfill Site macroinvertebrate

were surveyed at six (6) stations. Five of the stations indicated excellent water quality. One station (downstream of the farm pond) indicated good water quality.

An on-site habitat survey identified five major habitat cover types. The predominant cover type, covering approximately 60 to 70 percent of the Site was a "successional old field". It is a typical secondary vegetation, characteristic for ecologically disturbed areas, such as landfills and borrow areas. The information on the Site habitats will be used to ensure appropriate ecological restoration methods during the remedial design. No threatened or endangered species are present or use the Site.

VI. SUMMARY OF SITE RISKS

Two Risk Assessment studies were prepared as part of the Remedial Investigation. The studies identified existing and future risks, assuming that conditions of the site do not change. The Human Health Risk Assessment ("HRA") evaluated human health risks while the Ecological Risk Assessment ("ERA") evaluated environmental impacts at the Site.

The HRA and ERA are used by EPA to evaluate the need for remedial action. These risk assessments help determine the levels to which site contamination must be reduced to ensure future protection of human health and the environment. Both assessments are based on the assumption that exposure to Site contaminants can occur only if a complete exposure pathway exists. The exposure pathway consists of the following elements:

- @ a chemical source (contaminants);
- @ a medium (such as water, soil, air) through which contaminants can be transported;
- @ a point of contact with contaminants (exposure point); and
- @ a route of exposure (such as ingestion, inhalation, or dermal (skin) contact at the exposure point).

The Human Health Risk Assessment

Contaminants of concern ("COC") evaluated during the process of the HRA and determined to be relevant to this site are presented in Table 11. Potential risks for human health are identified by calculating the risk level for carcinogenic chemicals and the hazard index for noncarcinogenic chemicals.

Potential increased cancer risk is identified by the risk level. The concept of risk level can be explained as follows: if we assume that approximately 25 percent (25%) of population deaths were caused by cancer, in a population of one million, 250,000 people (or 25% of the population) would die of cancer. If this population was impacted by a superfund site with a cancer risk caused by a specific contaminant calculated as 1.0×10^{-6} , then, 250,001 people might die, and this one death above a "statistical" 250,000 level could be attributed to the site. If the risk was 1.0×10^{-4} the amount of people who die (still using the population number of one million) might be 250,100. An additional one hundred people above the 250,000 level. The EPA Target Risk Range for lifetime cancer risk for a superfund site is between 1.0×10^{-6} and 1.0×10^{-4} . Remedial action is generally warranted at a superfund site when the calculated carcinogenic risk level exceeds 1.0×10^{-4} .

The Hazard Index ("HI") identifies the potential for the most sensitive individuals to be adversely affected by noncarcinogenic chemicals. If the HI exceeds one (1.0), there can be concern for potential noncarcinogenic effects. As a rule, the greater the value of the hazard index above 1.0, the greater the level of concern.

Potentially exposed populations under current use scenarios include child trespassers, adult hunters, and residents who use private wells. The current use scenario assumes that the use of the Site would not change. The future use scenario considered residential and commercial use of the Site by residents and workers.

<Figure>

A. Risk Characterization - Current Use

Exposure routes include ingestion and/or dermal contact with leachate, ingestion of soil, inhalation of dust, ingestion of water from private wells, ingestion and/or dermal contact with surface water, and ingestion and/or dermal contact with sediment. Estimated risks associated with these exposure routes are

summarized in Table 12 and discussed separately below.

Leachate Ingestion and Absorption

The highest total carcinogenic risk to child trespassers is 5.0×10^{-6} , and for adult hunters it is 2.0×10^{-5} . Methylene chloride (a probable human carcinogen) and vinyl chloride (a known human carcinogen) are the main contributors to the carcinogenic risk. The risk for child trespassers is slightly above the EPA Target Risk Range for lifetime cancer risk of 1.0×10^{-6} to 1.0×10^{-4} . Noncancer effects, caused predominantly by manganese, are highest for child trespassers (HI 2.2), and adult hunters (HI 1.2) ingesting leachate either through water or eating the meat of killed game.

Surface Soil Ingestion

Both the HI and total carcinogenic risk indices do not indicate increased risk levels.

Inhalation of Dust

Both the HI and total carcinogenic risk indices do not indicate increased risk levels.

Groundwater Ingestion (Residential Wells)

The highest total carcinogenic risk is 5.0×10^{-5} . This risk is for exposure of adults to residential well groundwater in a residential use scenario. Arsenic is the main contributor to the cancer risk. This risk level is within the EPA Target Risk Range for lifetime cancer risk of 1.0×10^{-6} to 1.0×10^{-4} . The HI does not indicate increased risk levels.

Groundwater Dermal Absorption

The HI and total increased carcinogenic risk indices indicate that no potential adverse health impacts of significance are expected due to the exposure of receptors to Site related contaminants by these pathways.

<Figure>

Surface Water Ingestion and Absorption

The HI and total increased carcinogenic risk indices indicate that no potential adverse health impacts of significance are expected due to the exposure of receptors to Site related contaminants by this pathway.

Sediment Ingestion and Absorption

Both the HI and total carcinogenic risk indices do not indicate increased risk levels.

B. Risk Characterization - Future Use

The future risk scenario evaluates the development of water supply wells for domestic and/or commercial use within the area of an identified contaminant plume. The exposure routes are the same as those identified in the current use scenario with the addition of inhalation of VOCs released from groundwater while showering. Estimated risks associated with these exposure routes are summarized in Table 13 and discussed separately below.

Leachate Ingestion and Absorption

The highest total carcinogenic risk is for child residents ingesting leachate. This risk is 3.0×10^{-5} , and it is mainly caused by methylene chloride. This calculated risk is within the EPA Target Risk Range of 1.0×10^{-6} to 1.0×10^{-4} . The highest HI of 22 is for child residents ingesting leachate. Manganese is the main contributor to the noncancer risk.

Surface Soil Ingestion

The highest total carcinogenic risk of 2.0×10^{-5} is for child residents. This risk is mostly caused by arsenic. This calculated risk level is within the EPA Target Risk Range of 1.0×10^{-6} to 1.0×10^{-4} . The highest HI of 5.0 is for child residents. Cadmium is the main contributor to the noncancer risk.

Inhalation of Dust

Both the HI and total carcinogenic risk indices do not indicate increased risk levels.

<Figure>

Groundwater Ingestion and Dermal Absorption (Monitoring Wells)

The total carcinogenic risk ranges from 2.0×10^{-6} for child residents dermal absorption to 9.0×10^{-4} for adult residents ingestion. Arsenic and vinyl chloride are main contributors to the cancer risk. The calculated risk levels for adult residents and adult workers are higher than the EPA Target Risk Range of 1.0×10^{-6} to 1.0×10^{-4} . The highest HI for child residents ingesting water from on-site wells is 36.9. The noncancer risk is mainly caused by manganese and arsenic.

Inhalation of Vapors

The highest level of carcinogenic risk of 3.0×10^{-5} is for adult residents. Vinyl chloride is the main contributor to the cancer risk. This calculated risk level is within the EPA Target Risk Range of 1.0×10^{-6} to 1.0×10^{-4} . The HI does not indicate increased noncancer risk levels.

Surface Water Ingestion and Absorption

Both the HI and total carcinogenic risk indices do not indicate increased noncancer risk levels.

Sediment Ingestion and Absorption

Both the HI and total carcinogenic risk indices do not indicate increased noncancer risk levels.

The Ecological Risk Assessment

The ERA shows that the potential exists for an impact to ecological receptors around the Site. Leachate, sediment and surface water are the liquid media, and present a potential for a wide distribution of contamination. Soil contamination impacts stationary and resident fauna. The receptors are the resident flora and fauna as well as migratory fauna using these media for habitat and opportunistic resting and feeding.

VII. SUMMARY OF ALTERNATIVES

The Feasibility Study ("FS") reviewed a variety of technologies to determine if they were applicable to the contamination at the Site. Principal contaminants at the Site include manganese (in ground water and leachate), methylene chloride, phenols, metals, arsenic, and VOCs. These contaminants are present in leachate, soil, and ground water at the Site. Exposure to other contaminants of concern may occur through direct contact with or accidental ingestion of ground water and leachate, and to a lesser degree through soil and air. Contaminant source control is expected to reduce and eventually eliminate the release of leachate into the groundwater and soil, and protect residential wells and surface waters.

The remediation of the fill areas, leachate system, ground water, and leachate contaminated soils are interrelated. Therefore, this evaluation considers the general response actions collectively for all media. The technologies determined to be most applicable were further developed into remedial alternatives for the Site.

The alternatives evaluated are summarized below. The estimated costs reported for implementing each alternative includes an estimation of operation and maintenance expenses.

ALTERNATIVE 1: NO ACTION

Capital cost:	\$0
Annual Operation and Maintenance (O&M) Costs:	\$0
Present Worth:	\$0
Time to Implement:	N/A

The No Action Alternative is included in the FS Report for comparison with other alternatives under

investigation. It would only be selected if the Site posed little or no risk to the public health or the environment.

Under the No Action Alternative the existing fence, leachate collection drain, and landfill covers would not be repaired. There would be no additional measures undertaken to remedy and evaluate contaminant sources or their migration pathways. Rainfall would continue to infiltrate the surface cover on both landfills, and leachate would continue to be generated. Leachate seeps and overflow from the leachate collection tanks would be expected to continue until such time as contaminant levels were reduced through natural attenuation. Risks from the Site would remain and could potentially increase with time.

ALTERNATIVE 2 - SINGLE BARRIER CAP, LEACHATE COLLECTION, AND GROUND WATER MONITORING

Capital costs:	\$1,707,655.00
O&M Annual Costs (Year 1)	\$ 190,550.00
(Year 2)	\$ 129,550.00
(Year 3 through 6)	\$ 61,550.00
(Year 6 through 30)	\$ 34,325.00
Total Present Worth O&M	\$ 894,550.00
Total Present Worth Cost:	\$2,870,000.00
Time to implement: 1 year	

In Alternative 2, a single barrier cap would be installed on both the lined and unlined fill areas, the leachate collection system would be reconstructed, the debris and drum areas would be cleaned up, and a ground water monitoring system would be established. Cleanup of the debris and drum areas and reconstruction of the leachate collection system would be performed prior to cap construction to allow any contaminated soils to be consolidated in the areas to be capped.

Cleanup of the debris and drum areas would entail removal of scrap/waste materials and drum carcasses for off-site disposal or recycling. Any visibly stained soils in the debris area would be removed and placed in the areas to be capped. Confirmation soil sampling should be conducted in the drum area, the debris area, and the areas of the leachate seeps following excavation to ensure that the remaining contaminants do not exceed acceptable levels. These levels will be based on the statistical comparison of background soil samples and confirmation soil samples. Grading and revegetation of the debris and drum areas would be performed as needed to restore the natural appearance of these areas.

Reconstruction of the leachate collection system would be accomplished by removing and replacing the perimeter drain from the unlined fill area to the collection tank, replacing the existing leachate collection tanks, temporarily installing a new leachate storage tank, and piping the new leachate collection tanks to the new storage tank. Visibly stained soils, and soils with contaminants exceeding background levels, from leachate seep areas and from the leachate collection tank overflows would be removed and placed in the areas to be capped. Confirmation soil sampling will ensure that the remaining contaminants do not exceed acceptable levels based on the statistical comparison of background samples and confirmation soil samples. A temporary storage tank would be installed to contain excess leachate and provide a collection point for off-site transportation and disposal of leachate. This tank would be used for up to two (2) years following capping, by which time leachate production is expected to decline. The temporary storage tank would be removed from the Site at such time as the leachate collection tanks were able to provide sufficient storage capacity for leachate. Potential disposal options for leachate include the local Publicly Owned Treatment Works ("POTW") or a permitted Treatment Storage and Disposal Facility ("TSDF"). The areas around the leachate collection tanks would be graded and revegetated to restore the natural appearance of these areas.

Contamination of the groundwater at the Site is currently above background levels. Sources of contamination within the landfill will be contained and eliminated from further impact to groundwater by construction of the landfill cap and reconstruction of the leachate collection system. These components will significantly limit infiltration of rain water through the landfill and collect water presently migrating through the landfill. Groundwater contaminant levels will begin to decrease when these components of the remedy are constructed and established. It is estimated that groundwater background levels will be achieved in thirty (30) years after cap construction and leachate collection reconstruction are completed.

Once all contaminated soils had been consolidated in the fill areas, cap construction would begin. The two fill areas would be graded to achieve the required slopes for cap placement, with additional fill imported as needed. A single barrier cap, would consist of a low permeability layer overlain by a drainage or cover soil layer, overlain by a vegetated topsoil layer. A conceptual layout of the cap and leachate

collection system is shown on Figure 2.

At the completion of all construction activities, long-term O&M would be implemented for the Site. The O&M would include: Maintenance of the caps and leachate collection system; installation and maintenance of any access restrictions (such as perimeter fencing) deemed necessary to protect the integrity of the Site; and performance of ground water monitoring. Long-term ground water and surface monitoring would incorporate periodic sampling and analysis at predetermined locations which would adequately track migration of contaminated ground water. The sampling parameters would be determined during the Remedial Design. Because the proposed remedy of this site leaves hazardous waste in place, 5-year reviews would be conducted to ensure that the Site continues to be protective of human health and the environment.

Vegetative cover of the same seasonal variety as vegetation native to the Site would be planted on the capped area and areas disturbed by soil removal. Deed restrictions to prevent future use of on-site ground water and control access to the Site would also be implemented.

ALTERNATIVE 3 - PADER MUNICIPAL LANDFILL CAP, LEACHATE COLLECTION, PASSIVE GAS EMISSIONS COLLECTION (VENTING), AND GROUND WATER MONITORING

Capital Cost:	\$1,971,950.00
O \$ M Annual Costs (Year 1)	\$ 190,550.00
(Year 2)	\$ 129,550.00
(Year 3 through 5)	\$ 61,550.00
(Year 6 through 30)	\$ 34,325.00
Total Present Worth O&M	\$ 894,550.00
Total Present Worth Cost:	\$3,130,000.00
Time to implement: 1 year	

This alternative includes all of the components of Alternative 2 except that a composite barrier cap, rather than a single barrier cap, would be constructed on the lined and unlined fill areas, and a landfill gas emissions collection system would be installed. A description of those components of Alternative 3 not included in Alternative 2 is as follow: the composite barrier cap, also called a PADER cap, is similar to the Alternative 2 single layer cap except that an additional drainage layer is included. A typical PADER municipal landfill cap includes one impermeable layer, overlain by a drainage layer, which is overlain by a 24-inch cover soil layer, and finally overlain with a vegetated cover.

In addition to capping, the gas generated within the landfill would be vented to the atmosphere by installing a passive type of gas collection system. Gas vents would be installed to ensure the integrity of the cap to complete state approved landfill closure plan requirements. The vents would be installed during the installation of the landfill cap.

ALTERNATIVE 4 - RCRA CAP, LEACHATE COLLECTION, LANDFILL GAS EMISSIONS COLLECTION (VENTING), GROUND WATER COLLECTION AND TREATMENT, AND GROUND WATER MONITORING

Capital costs:	\$3,040,175.00
O&M costs (Year 1)	\$ 199,550.00
(Year 2)	\$ 142,550.00
(Year 3 through 5)	\$ 82,550.00
(Year 6 through 30)	\$ 55,325.00
Total Present Worth O&M	\$1,199,150.00
Total Present Worth Cost:	\$4,600,000.00
Time to implement: 1 year	

This alternative includes all of the components of Alternative 3 and an additional Resource Conservation and Recovery Act ("RCRA") cap and water recovery and treatment system. A RCRA-type cap, also called a composite barrier, is similar to a PADER municipal landfill cap except that an additional impermeable layer is included.

Ground water recovery and treatment would consist of approximately five (5) new wells installed in the southeast corner of the Site. The wells would yield a total of 4 gallons per minute (gpm) and the recovered ground water (containing approximately 50 ppb of VOC, 1.3 ppm manganese, and 40 ppm iron) would be pumped to a central, on-site treatment facility. Precipitation would be used to remove manganese and iron, and carbon absorption would be used for organics removal. The treated water would be discharged to the eastern tributary at the Site.

Although this alternative is evaluated under the assumption that leachate would be collected for off-site treatment and disposal, it is possible that collected leachate could be treated in the on-site ground water treatment system. On-site leachate treatment would be evaluated in detail during the RD.

VIII. COMPARATIVE EVALUATION OF ALTERNATIVES

Each of the four (4) remedial alternatives has been evaluated with respect to the nine (9) evaluation criteria set forth in the NCP, 40 C.F.R. Section 300.430(e)(9). These nine criteria can be categorized into three groups: threshold criteria, primary balancing criteria, and modifying criteria. A glossary of evaluation criteria is presented below:

Threshold Criteria

1. Overall Protection of Human Health and the Environment: addresses whether a remedy provides adequate protection and describes how risks are eliminated, reduced, or controlled.
2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs): addresses whether a remedy will meet all of the applicable, or relevant and appropriate requirements of environmental statutes.

Primary Balancing Criteria

3. Long-term Effectiveness: refers to the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals are achieved.
4. Reduction of Toxicity, Mobility, or Volume through Treatment: addresses the degree to which alternatives employ recycling or treatment that reduces toxicity, mobility, or volume
5. Short-term Effectiveness: addresses the period of time needed to achieve protection and any adverse impacts on human health and environment that may be posed during the construction and implementation period until cleanup goals are achieved.
6. Implementability: the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.
7. Cost: includes estimated capital, operation and maintenance costs, and present worth costs.

Modifying Criteria

8. State Acceptance: indicates whether, based on its review of backup documents and Proposed Plan, the State concurs with, opposes, or has no comment on the preferred alternative.
9. Community Acceptance: will be assessed in the Record of Decision following a review of any public comments received on the RI/FS report and the Proposed Plan.

1. Overall Protection of Human health and the Environment

EPA has selected Alternative 3, as the remedy to be implemented at the Bell Landfill Site. A primary requirement of CERCLA is that the selected remedial alternative be protective of human health and the environment. A remedy is protective if it reduces current and potential risks to acceptable levels under the established risk range posed by each exposure pathway at the Site.

Alternative 1 does not reduce risk to human health and the environment, because it does not address the risk posed through continued exposure to leachate. Therefore, Alternative 1 will not be evaluated any further.

Alternatives 2 through 4 would eliminate the existing pathways of contaminant exposure at the Site. Covering contaminated soils with caps and reconstructing the leachate collection system would reduce surface infiltration, prevent direct contact, limit gas emissions, and control erosion. Specifically, capping the high-volume, low-toxicity waste disposed at the Site would minimize the leachate production and prevent further leachate migration into soil and groundwater. It would also reduce the migration of leachate into the Eastern and Western Tributaries and the Farm Pond, and minimize contaminant levels in the sediment. Caps would prevent the direct contact with landfill contents. Finally, caps would control surface water runoff and erosion.

Alternatives 2 through 4 would provide protection to human health in the sense that monitoring existing wells would likely warn about possible exposure to contaminants in the groundwater. Alternative 4 would provide protectiveness essentially similar to that provided by Alternatives 2 and 3. Although Alternative 4 could theoretically provide enhanced protectiveness by reducing contaminant levels in the aquifer through pumping and treatment, there is evidence that due to the low hydraulic conductivity, it is not likely that groundwater would be remediated any sooner than through natural attenuation. Alternative 4 would be impracticable as there are no receptors for on-site groundwater, and residential wells have not been impacted by the Site. Future groundwater contamination is not expected, particularly once the fill area is capped.

The deed and access restrictions in Alternatives 2 through 4 would protect residents from possible direct contact with landfill contaminants.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARS)

Under Section 121(d) of CERCLA, 42 U.S.C. [Para] 9621 (d), and EPA guidance, remedial actions at CERCLA sites must attain legally applicable or relevant and appropriate Federal and promulgated State environmental standards, requirements, criteria and limitations which are collectively referred to as "ARARS", unless such ARARS are waived under Section 121(d)(4) of CERCLA, 42 U.S.C. [Para] 9621(d)(4). Applicable requirements are those substantive environmental standards, requirements, criteria, or limitations promulgated under Federal or State law that are legally applicable to the remedial action to be implemented at the Site. Relevant and appropriate requirements are those substantive environmental protection requirements, criteria or limitations promulgated under Federal or State law which, while not applicable to the hazardous materials found at the Site, the remedial action itself, the Site location or other circumstances at the Site, nevertheless address problems or situations sufficiently similar to those encountered at the Site that their use is well-suited to the Site. ARARS may relate to the substances addressed by the remedial action (chemical-specific), to the location of the Site (location-specific), or to the manner in which the remedial action is implemented (action-specific).

Chemical-Specific ARARS

@ The Commonwealth of Pennsylvania requires that contaminated ground water be actively remediated to background (25 PA Code [Para][Para] 264.90-264.100 and in particular, [Para][Para] 264.97(i), (j), and 264.100(a)(9)).

Analytical results of what has been determined to be background levels for groundwater are presented below. Alternative 1 does not meet this ARAR. Alternatives 2 and 3 (the Selected Remedy) would potentially achieve this ARAR as a result of natural attenuation over time once the caps were installed and leachate production minimized. Alternative 4 could potentially clean the ground water to background in a shorter period of time than Alternatives 2 and 3. However, due to the low hydraulic conductivity in the area of the Site, it is not likely that ground water would be remediated much sooner than through natural attenuation.

@ Relevant and appropriate Maximum Contaminant Levels ("MCLs") promulgated under the Safe Drinking Water Act, 42 U.S.C. [Para] 300f to 300j-26, and set forth at 40 C.F.R. [Para] 141.61(a) and 55 Fed. Reg. 30370 (July 25, 1990), are presented below in comparison with background groundwater levels:

CONTAMINANT	CONCENTRATION (mg/liter)	
	MCLs	BACKGROUND
Aluminum	0.05 to 0.2 (secondary)	0.065
Arsenic	0.05	0.0025
Barium	2	0.068
Beryllium	0.004	---
Chromium	0.1	---
Copper	1.3 (action level)	0.011
Lead	0.015 (action level)	---
Manganese	3 (secondary)	0.058
Nickel	0.1	---
Vanadium	---	---
1-2-Dichloroethane (total)	0.005	---
Benzene	0.005	---
Tetrachloroethene	0.005	---
Trichloroethane	0.005	---
Vinyl Chloride	0.002	---

Alternatives 1, 2, and 3 (the Selected Remedy) do not include active ground water remediation. Alternatives 2 and 3 (the Selected Remedy) would meet these ARARs through limiting infiltration in the ground water and through natural attenuation. There are chemical specific ARARs for ground water clean up, and Alternative 4 would meet these ARARs relating to ground water remediation and treatment.

@ Alternative 3 (the Selected remedy) and Alternative 4, include as part of the remedy a gas collection system and must meet NESHAPs and Pennsylvania Air Quality Control Regulations, 25 Pa. Code [Para][Para] 123.1, 127.1, and 131.1 et seq.

Location-Specific ARARs

@ 40 C.F.R. Part 6, Section 6.302(a) and Appendix A which governs on-Site wetlands requirements (requiring Federal Agencies conducting certain activities to avoid, to the extent possible, activities which would have an adverse impact on wetlands or loss of wetlands) would be met under Alternatives 2 thru 4.

Action-Specific ARARs

@ The Pennsylvania Municipal Waste Regulations, 25 PA Code Article VIII specifically, 25 PA Code [Para] 271.113 set forth requirements for municipal landfills. These regulations require specific procedures be undertaken to close a landfill, and Alternative 1 does not meet most of these procedures. All four alternatives would meet the requirements of Section 273.212 (Access control). Alternatives 1 and 2 would not meet specific requirements of Sections 273.234 (Final cover and grading), 273.322(a)(b), and 273.171 (Gas monitoring and recovery plan). Alternatives 2, 3 (the Selected Remedy), and 4 must follow Sections 273.235 (Revegetation), 273.236 (Standards for successful revegetation), and 273.242-273.244 (Soil erosion and sedimentation control).

@ Alternatives 1, 2, 3 (the Selected Remedy) and 4 must meet the requirements of Soil and Water Conservation Regulations, Chapter 102 (25 Pa. Code [Para] 102.1 et seq.), Water Quality Management Regulations, Chapters 92, 93 and 95 (25 Pa. Code [Para][Para] 92.1, 93.1, and 95.1 et seq.). Chapter 102.1 sets forth provisions that impose requirements on earth moving activities which create accelerated erosion to the soil or create a

danger of accelerated soil erosion to plan and implement effective soil conservation measures. Chapter 92.1 sets forth provisions for the administration of the National Pollutant Discharge Elimination System ("NPDES") program within Pennsylvania. Chapter 93.1 sets forth specific standards for the quality of Pennsylvania's waters and includes specific water quality criteria and designated water use protection for each stream in Pennsylvania. Chapter 95.1 sets forth waste treatment requirements for all dischargers including general requirements for "high quality waters" and "exceptional value waters" and the procedures for dealing with special circumstances (such as discharges to acid impregnated streams and discharges to lakes, ponds, and impoundments).

@ 25 Pa. Code [Para][Para] 123.1 and 123.2 are applicable to capping and require that dust generated by earthmoving activities be controlled with water or other appropriate dust suppressants. This applies to Alternatives 2, 3 (the Selected Remedy), and 4.

@ Treatment and discharge of contaminated ground water (Alternative 4) would have to meet the requirements of Pennsylvania's NPDES program. These requirements, as set forth in 25 Pa. Code [Para][Para] 93.1 through 93.9, include design, discharge, and monitoring requirements for groundwater collection and treatment.

@ 25 Pa. Code [Para][Para] 264.111 (closure performance standards), 264.117 (postclosure care and use of property), and 264.310(b),(i), (iv) and (v) (closure and postclosure care) contain relevant and appropriate requirements with respect to maintenance of the existing cap. These provisions also require adequate repair of the landfill cap. This applies to Alternatives 2, 3 (the Selected Remedy), and 4.

@ Reconstruction of the leachate collection system, as outlined in Alternatives 2, 3 (the Selected Remedy), and 4 may result in the generation of hazardous wastes. The Selected Remedy must be implemented consistent with the requirements of 25 Pa. Code Part 262 subparts A, [Para][Para] 262.11 and 262.12 (relating to hazardous waste determination and identification numbers), subpart B, [Para][Para] 262.20, 262.22, and 262.23 (relating to manifesting requirements for off-site shipments of hazardous wastes), and subpart C (relating to pre-transport requirements); 25 Pa. Code Part 263 (relating to transporters of hazardous wastes). With respect to operations at the Site generally, the Selected Remedy must be consistent with the substantive requirements of 25 Pa. Code Part 264 subparts G, I (concerning hazardous waste generation as part of the Selected Remedy maintained in containers), J (concerning hazardous waste generation as part of the Selected Remedy treated/stored in tanks).

@ 49 C.F.R. [Para] 171.1-171.16 sets forth applicable requirements regarding off-site transportation of hazardous wastes (record keeping and manifesting of all hazardous wastes shipped offsite and includes packaging, labelling, and placarding of shipping containers).

@ 29 C.F.R. [Para] 1910.170 sets forth applicable requirements regarding worker safety in the handling of hazardous substances. This applies to Alternatives 2, 3 (the Selected Remedy), and 4.

3. Reduction of Toxicity, Mobility, or Volume through Treatment

This evaluation criterion addresses the degree to which a technology or remedial alternative reduces toxicity, mobility, or volume of hazardous substances at the Site. Section 121(b) of CERCLA, 42 U.S.C. [Para] 9621(b), establishes a preference for remedial actions which include treatment that permanently and significantly reduces the toxicity, mobility, or volume of contaminants.

Alternatives 1, 2, and 3 (the Selected Remedy) do not employ an on-site treatment. Leachate would be stored on-site and trucked off-site for treatment or disposal. Technologies that provide no treatment do not require evaluation under this criterion.

Alternatives 2, 3 (the Selected Remedy), and 4 employ leachate collection system reconstruction and capping which will minimize or eliminate the migration of waste from the Site. This system will control seepage along the perimeter of the capped areas and prevent prevent discharges to the surface and groundwater. A leachate collection system could achieve some longterm reduction of landfill volume as a direct result of leachate extraction.

Alternative 4 would theoretically reduce contaminant toxicity, mobility and volume through water recovery and leachate collection. It would also reduce the volume and toxicity of water contaminants through ground water treatment. Practically, however, the low well yields at the Site would result in a long period of time necessary to remove a significant mass of contaminants from the ground water.

4. Implementability

This evaluation criterion addresses the difficulties and unknowns associated with implementing technologies, the ability and time necessary to obtain required permits and approvals, the availability of services and materials, and the reliability and effectiveness of monitoring.

Alternative 1 is a No Action Alternative and is currently implemented at the Site. Alternatives 2 and 3 (the Selected Remedy) would be easily implemented at the Site. The materials, labor, equipment, and services needed to remove and consolidate contaminated soils, reconstruct the leachate collection system, remove debris from the Site, install new caps on the fill areas, install gas vents, and institute ground water monitoring are readily available, and the technologies to be used are proven and reliable. There would be no permits required to implement these alternatives, but implementation of the ground water and site use restrictions would require cooperation among various governmental agencies, (such as PADER and County and Township officials). Long-term water monitoring, including both on-site wells and residential wells, is adequately protective.

The main difference between Alternatives 2 and 3 (the Selected Remedy), and Alternative 4 is that the last alternative includes ground water recovery. The technical feasibility of ground water recovery at the Site is complicated by a low hydraulic conductivity, low well yields, and a small zone of influence of any one well. It is very probable that these factors will increase after the PADER cap is installed on both disposal areas. It is very probable that once the caps are established, groundwater recovery would become even more difficult.

5. Short-Term Effectiveness

Short-term effectiveness addresses how protective an alternative is to human health and the environment during the construction and operation phase of the remedial action.

Short-term effectiveness is not applicable to Alternative 1 since there are no construction activities undertaken. The short-term effectiveness of Alternatives 2, 3 (the Selected Remedy), and 4 is essentially equivalent. Construction of a composite barrier cap and installation of the groundwater recovery and treatment system under Alternative 4 could extend the period of time required for implementation and increase the potential short-term risk. All three alternatives would be completed within relatively short time frames with minimal impacts to the community, workers, and environment.

6. Long-Term Effectiveness and Permanence

Long-term effectiveness and permanence evaluates the risk remaining at the site after the remedial action goals have been achieved.

Alternative 1 would not provide long-term effectiveness since the pathways of contaminant migration and the risks would remain unchanged. Alternatives 2, 3 (the Selected Remedy), and 4 provide a significant degree of long-term effectiveness and permanence. A cap in conjunction with the reconstructed leachate collection system would reduce leachate generation and contaminant mobility, and eliminate the risks associated with direct contact for as long as the systems were properly maintained. The potential risks associated with ingestion of contaminated groundwater would be permanently reduced over time. The risks would be further reduced through institutional controls, such as deed and access restrictions to prevent future on-site well construction.

Effectiveness of Alternative 4 is questionable, since the low well yields and small zone of influence would not be practicable.

7. Cost

CERCLA requires selection of a cost-effective remedy that protects human health and the environment and meets the other requirements of the Statute. Evaluation of costs of each alternative generally includes the calculation of direct and indirect capital costs and the annual operation and maintenance (O&M) costs, both calculated on a present worth basis. The present worth of each alternative has been calculated for comparative purposes.

Direct capital costs consist of the following:

- @ Remedial action construction
- @ Equipment
- @ Building and services

@ Waste disposal cost

Indirect capital costs include:

- @ Engineering expenses
- @ Environmental permit acquisition
- @ Start-up and shakedown
- @ Contingency allowances

Annual O&M costs include the following:

- @ Operating and maintenance labor and material costs
- @ Maintenance materials and labor costs
- @ Chemicals, energy, and fuel
- @ Administrative costs and purchased services
- @ Monitoring costs
- @ Cost for periodic site review (every five years)
- @ Insurance, taxes, and license costs

The remedial action alternative cost estimates have an accuracy range of +50 percent (+50%) to -30 percent (-30%). For the purpose of the present worth calculations, all Alternatives have a performance period of 30 years.

Alternative 1 is a No Action Alternative. It would cost \$0.

Alternative 2 would cost \$2,870,000. This cost would include installation of a cap, leachate collection system, and O&M.

Alternative 3 (the Selected Remedy) would cost \$3,130,000. This cost would include installation of a PADER municipal cap, leachate collection system, and O&M.

Alternative 4 would cost \$4,600,000. This cost would include installation of a RCRA cap, leachate collection system, ground water treatment, and O&M.

8. State Acceptance

The Commonwealth of Pennsylvania is in agreement with and concurs with the selected remedy outlined in this Record of Decision ("ROD").

9. Community Acceptance

Community acceptance of the preferred alternative has been evaluated, and will be described in the Responsiveness Summary.

IX. SELECTED REMEDY

Based upon consideration of information available for the Bell Landfill Site, including the documents available in the administrative record file, and evaluation of the risks currently posed by the Site, the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, EPA has selected Alternative 3, a containment remedy, as the remedy to be implemented at the Bell Landfill Site.

The Selected Remedy shall include the following: installation of a PADER municipal landfill cap on two disposal areas, reconstruction of the Leachate Collection system, removal of visibly stained soils from areas directly impacted by leachate, installation of passive Landfill Gas Emissions Collection (venting), and implementation of long-term Ground Water Monitoring. In addition, the Selected Remedy will include: maintenance of the cap, a leachate collection system, and the perimeter fencing; access and deed restrictions; surface water monitoring; 5-year performance reviews; and proper revegetation.

It is estimated that the present worth cost of the Selected remedy is \$3,130,000.00. The selected remedy will be effective, and will significantly reduce and control Site risks. This remedy represents a reasonable choice, and provides good value in comparison to the costs of the other remedial action alternatives.

Leachate and the contaminants contained in the leachate is considered a major environmental concern at the Site, and the Selected Remedy will reduce leachate generation by capping the disposal areas and reconstructing the leachate collection system. The PADER cap will prevent direct contact with contaminated soils another major environmental concern and leachate. It will also minimize the potential of off-site migration of contaminants in ground water. Ground water will be remediated via natural attenuation. EPA estimates this goal will be achieved in less than 30 years after cap construction and leachate collection reconstruction are completed. Other important considerations in the selection of Alternative 3 include compliance with ARARs, and the duration and simplicity of implementation.

Remediation of the Bell Landfill Site will effectively eliminate the risk associated with potential exposure to contaminants in the leachate, groundwater and soils at the Site.

X. PERFORMANCE STANDARDS

Landfill Cap

The required final cover for a municipal waste landfill in Pennsylvania, as presented in 25 Pa. Code [Para] 273.234, shall be placed over both waste disposal areas. The cover shall be designed to achieve a permeability of no more than 1×10^{-7} cm/sec.

This cap shall eliminate direct contact with waste. It shall also reduce infiltration and surface water runoff and subsequently reduce leachate generation. The cap shall be graded to reduce soil erosion and not crack extensively under dry weather conditions. The cap shall be capable of supporting the germination and growth of a vegetative cover. The cover shall be maintained for at least 30 years.

Leachate Collection

The reconstruction of the Leachate Collection system shall be sufficient to collect all leachate generated in the waste disposal areas and transport it into collection tanks. After capping and leachate collection reconstruction, leachate seeps from the disposal areas shall be greatly reduced (it is anticipated that the leachate seeps will eventually cease). Leachate collection drains and tanks shall be designed to handle the highest estimated volume of leachate without clogging and over-topping. Leachate will be transported off-site via tanker truck. The collection rates must reflect leachate generation to avoid tank over-topping. The areas around the leachate collection tanks must be graded and revegetated as needed to restore the natural habitat.

Current analytical data show that the leachate is not a RCRA waste. However, it is possible that the concentration and contents of the leachate can change. Therefore, additional sampling during remedial design will be required to determine the constituents of the leachate and its concentrations, and the variability of leachate characteristics, such as seasonal variations of influent flow, chemical content, and other conventional parameters (BOD, COD, TOC, TSS, etc.). This data will be used to determine whether direct discharge to Publicly Owned Treatment Works ("POTW") may be appropriate or whether off-site pretreatment may be required.

The transportation of leachate off-site requires both EPA and PADER approval of the facility accepting the leachate. Contractual arrangements shall be made in advance with the receiving facility so as to prevent excessive storage of leachate on-site.

Removal of Leachate Impacted Soils

Any visibly stained soils in the debris area, the drum area and areas of leachate seeps, or soils which have been impacted by leachate seeps, will be removed to a minimum of 6-inch depth and placed under the caps. The accuracy of this work, based on the results of confirmation soil samples will be approved by EPA.

Landfill Gas Venting System

The landfill gas venting system shall meet the requirements under 25 Pa. Code Chapter 127 (specifically Section 127.12(a)(5) for new air emission sources). The number and location of gas vents shall be determined during the remedial design. To monitor the potential occurrence of landfill gas migration, perimeter gas monitoring probes shall be installed at the same time the soil cover is installed.

Long-Term Monitoring

Approximately six (6) on-site monitoring wells will be sampled and analyzed quarterly for a list of indicator parameters including VOCs, manganese and wet chemistry parameters which are indicative of the process of natural degradation. Three (3) surface water and three (3) sediment samples will be collected annually from stations 3, 6, and 7, which locations are presented on Figure 4. In addition, all six (6) off-site residential wells will be sampled for VOCs and metals on an annual basis. Long-term monitoring results will be used to determine the risk to off-site receptors. If the data continues to show no site-related impact, the sampling frequency may be reduced by EPA.

Deed and Access Restriction

A deed restriction shall be placed on the Bell Landfill property which shall prevent any use of this property for residential purpose. The existing perimeter fence shall be maintained for at least 30 years.

XI. COMMUNITY RELATIONS SUMMARY

In accordance with Sections 113 and 117 of CERCLA, 42 U.S.C. [Para][Para] 9613 and 9617, EPA in conjunction with PADER, issued a Proposed Plan to present the preferred remedial alternative. The Proposed Plan and the RI/FS reports were made available to the public in the copies of the administrative record maintained at the EPA Region III offices and at the information repository listed below:

Terry Township Municipal Building
RD No. 2
PO Box 180 A
Wyalusing, Pennsylvania 18853
(717) 746-1133
(717) 746-1634

EPA set a public comment period from July 5, 1994 through August 4, 1994, to encourage public participation in the selection process. In response to citizens' letters, the comment period was extended to September 3, 1994. As part of the public comment period, a public meeting was held on July 19, 1994 to present information and to accept oral and written comments and to answer questions from the public regarding Site remedial alternatives. A transcript of the meeting was maintained in accordance with Section 117(a)(2) of CERCLA, 42 U.S.C. [Para] 9617(a)(2). Responses to the oral and written comments received during the public comment period are included in the attached Responsiveness Summary.

Announcements of the public meeting, the comment period, and the comment period's extension were published in the Towanda Daily Review on July 4, 1994 and August 9, 1994. All documents considered or relied upon reaching the remedy selection decision contained in this Record of Decision are included in the Administrative Record for this Site and can be reviewed at the information repositories.

XII. DOCUMENTATION OF SIGNIFICANT CHANGES FROM PROPOSED PLAN

The Proposed Plan for the Site was released for comment in July, 1994. The Proposed Plan described the alternatives studied in detail in the Feasibility Study and identified Alternative 3 as the Preferred Alternative. EPA reviewed all written and verbal comments submitted during the comment period and at the public meeting. Upon review of these comments, it was determined that no significant changes to the remedy presented in the Proposed Plan were necessary.

APPENDIX A

BELL LANDFILL
BRADFORD COUNTY, PENNSYLVANIA

RESPONSIVENESS SUMMARY
SEPTEMBER 30, 1994

A. OVERVIEW

On July 5, 1994, the United States Environmental Protection Agency (EPA) issued a Proposed Plan that stated its preferred alternative for the Bell Landfill Superfund Site in Bradford County, Pennsylvania. EPA's preferred alternative addresses leachate seeps and contaminated soils, groundwater and surface water at the site. The preferred alternative involves the following actions:

- @ prevent leachate generation/seepage and further groundwater contamination and subsequent off-site migration by capping the waste areas, reconstructing the leachate collection system, and maintaining the new caps;
- @ prevent direct contact with contaminated soils and leachate by moving contaminated soils to the two waste disposal areas, capping the disposal areas, and maintaining a fence;
- @ protect the cap from explosion hazards from landfill gas by installing a Landfill Gas Emission Collection (venting) system; and
- @ provide additional protection by implementing institutional controls to restrict the use of the site and institute long-term ground and surface water monitoring.

Based on comments received during the public comment period, the residents of Bradford County support EPA's preferred alternative and believe it will be effective. Several residents did however, express some concerns for further action near the Site.

The following sections document concerns raised by the community and EPA responses to those concerns.

B. BACKGROUND ON COMMUNITY INVOLVEMENT

Community interest in the Bell Landfill Site dates back to 1979 when residents adjacent to the site complained to state authorities that leachate seeps from the Site were contaminating soil and surface water on their property. Since 1979, local residents have continued to be concerned about the leachate seeps and their impact on human health, local wildlife, and adjacent properties. Community interest in the landfill became more vocal once EPA was involved at the Site.

EPA published the Proposed Plan on July 5, 1994 and EPA held a public meeting with residents at the Terry Township Municipal Building in Wyalusing, Pennsylvania on July 19, 1994. At the public meeting EPA representatives summarized the results of the Remedial Investigation ("RI"), the Feasibility Study ("FS"), and the Risk Assessments ("RAs") performed for the Site. These representatives presented EPA's preferred remedial alternative for mitigating the public health and environmental threats posed by contamination at the Site. EPA explained that the Proposed Plan addresses contamination in the fill areas on the former landfill and leachate seeps, reconstruction of the leachate collection system, and monitoring ground water contamination. The transcript of the public meeting is contained in the Administrative Record for this Site.

Local residents, a reporter from the Towanda Daily Review, and a Terry Township Supervisor offered comments and asked questions on the Plan. Because of additional issues not addressed in the Proposed Plan, a local resident requested an extension of the public comment period so that he and others would have additional time to review EPA's preferred alternative. EPA granted a thirty (30) day extension in the public comment period to accommodate this resident and the comment period ended on September 3, 1994. EPA received four (4) written comments during the public comment period which are addressed below.

C. SUMMARY OF COMMENTS BY THE COMMUNITY RECEIVED DURING BOTH PUBLIC MEETING AND DURING THE PUBLIC COMMENT PERIOD AND EPA'S RESPONSES

Comments raised during the Bell Landfill public comment period on the Proposed Plan are summarized below. The comment period opened on July 5, 1994 and ended on September 3, 1994. Residents noted that they

had studied the Proposed Plan and concurred with EPA that Alternative 3 would be an effective remedy for the Site. In addition to the Site, Residents in the community were concerned with four (4) other areas they believed warranted additional attention by EPA. These four areas addressed (1) wildlife (specifically deer) in the area of the Site; (2) a road which runs along the border of the Site; (3) creeks which flow through the Site; and (4) adjoining lands/properties. The comments are summarized under these areas of concern.

Wildlife

Residents have been concerned for some time that wildlife, particularly deer, may become sick from drinking leachate onsite and that individuals who hunt and eat deer may also become sick. The residents also expressed concern that wildlife maybe trapped onsite by the perimeter fencing.

1. A reporter from the Towanda Daily Review attended the public meeting and asked questions regarding deer trapped onsite. It was the reporter's understanding EPA had stated that deer located within the perimeter of the fence would have to be tested before they could be released into the wild. The reporter questioned whether this had been done. Some residents voiced concern about the possibility that a deer that died onsite last winter may have died as a result of exposure to contamination (drinking water onsite which contained leachate), and that other deer may have the potential to pass contaminants on to those who hunt and eat deer meat.

EPA Response: With regard to trapped deer, representatives of the Pennsylvania Game Commission and U.S. Fish and Wildlife Service believe that deer are not trapped onsite by the existing fence. The Fish and Wildlife representative stated that deer can jump as high as fourteen feet from a standing start, so a seven and one-half foot fence would not stop deer from entering or exiting the Site.

With regard to testing potentially trapped deer for contaminant ingestion, any testing would be the responsibility of the PRPs. However, EPA believes the probability for deer to be affected by the Site is low because of low levels of contaminant found in the leachate. A deer's average life-span is three to five years. Therefore, the deer that died onsite probably died of natural causes during an unusually harsh winter and not as a result of being poisoned by drinking leachate within the fenced area.

In addition, EPA believes once the cap is constructed and in place, any potential contaminant exposure to wildlife (such as deer) from leachate will be mitigated.

2. Another resident was concerned that the fence was not high enough to keep deer from entering the Site as well as other small animals capable of carrying contaminants into the natural food chain.

EPA Response: The selected remedy should prevent further leachate seeps and any problems associated with animals ingesting contaminants.

The Road

1. Several residents were concerned with dust from the road. They also requested that polluted ditches adjacent to the Site be cleaned out and that the road be rebuilt with an impervious dust-free surface.

EPA Response: It appears that the residents want EPA, as part of the remedy, to pave the dirt road with some type of dust-free material. At this time, the proposed remedy does not address the resurfacing of this road. However, the concern about dust during construction of the remedy will be addressed during the remedial design. EPA will include in the remedial design ways to mitigate construction caused roadway dust. EPA will work with the residents to alleviate their concerns.

The Creek

1. The same residents expressed concern with an unnamed creek that flows near the Site. They recommended that the stream bed be cleaned out and straightened to reduce flooding and facilitate movement and dilution of leachate.

EPA Response: At this time, EPA has not recommended any remedial actions that specifically clean or straighten the creek. While the residents are concerned with one creek, EPA wants to clarify that there are actually two (2) creeks which border the Site. The ecological risk assessment performed by EPA did not reveal any significant contamination to surface waters (i.e. the creeks) that would warrant the actions recommended by the residents. In fact, once the Site is remediated the risk of further leachate releases into these surface waters should be eliminated. EPA does plan to monitor these creeks in the future; and if

monitoring indicates any adverse impacts, further actions will be considered and addressed.

Adjacent Lands

1. The same residents also expressed concern that areas downgradient from the dump areas allegedly "have suffered severe degradation and should be cleared out and restored to at least their original usefulness and appearance." More specifically these areas include Master's pond (east of the dump areas) which has become a leachate collection and settling basin for the East dump. On the west side, denuded areas extend from the dump zone toward the creek. Residents did not specify what clean-up actions they believe would be effective short of soil removal.

EPA Response: Based upon the correspondence submitted by the residents, EPA is unclear as to what areas the residents are referring to downgradient from the dump areas. At this time, EPA has not recommended any remedial actions that specifically restore the alleged degraded areas or Master's pond. After the Site is remediated and leachate seeps are eliminated, areas affected by leachate contamination should return to their natural state on their own. Based upon results of sampling and ecological tests, there is no indication at this time that areas downgradient of the Site warrant specific remedial action.

Technical Questions/Concerns Regarding Remedial Alternatives

1. At the public meeting Mr. Francis Hardenstine, the Terry Township Supervisor, asked a series of questions regarding past and future groundwater monitoring. Specifically, Mr. Hardenstine inquired about the frequency of monitoring of wells drilled by EPA and if additional monitoring would occur during the selected remedy.

EPA Response: Based upon a review of the transcript from the public meeting, it appears that Mr. Hardenstine's concern addressed wells which were drilled in 1992. Mr. Hardenstine inquired as to how often the wells have been monitored. Since 1992, the monitoring wells were sampled twice. The selected remedy calls for the continued monitoring of these and other wells twice a year. During the first remedial investigation, EPA noticed a high concentration of metals, arsenic, and manganese in the groundwater. Continued monitoring will allow EPA to see the extent of groundwater contamination and whether the contamination is migrating to other areas near the Site.

2. The reporter from the Towanda Daily Review asked how long after the public comment period would construction start, assuming the project is approved.

EPA Response: Once the Record of Decision ("ROD") is signed by the Regional Administrator, EPA usually sends out Special Notice Letters ("SNLs") to the identified potentially responsible parties ("PRPs") for the Site inviting them to enter into good faith negotiations for a consent decree for implementation of remedial design/remedial action ("RD/RA"). If the PRPs are willing to negotiate with EPA during this special notice period, a consent decree can be signed within 60 days or a period of time not to exceed 120 days from receipt of special notice.

If the PRPs and EPA enter into a negotiated consent decree for RD/RA, then the PRPs commence remedial design. The remedial design phase of the cleanup could take approximately two (2) years to complete. EPA estimates that construction (remedial action) of the selected remedy could take up to one year (or longer) to complete and will commence once the remedial design phase is completed.

D. REMAINING CONCERNS

At this time, EPA believes there are no remaining community issues which have not been adequately addressed during selection of the remedy for this Site.

APPENDIX B

BELL LANDFILL

ADMINISTRATIVE RECORD FILE <Footnote>* Administrative Record File available 5/18/92, updated 7/9/92, 4/7/94, 4/14/94, 7/1/94, 7/18/94, and 9/22/94.</footnote>
INDEX OF DOCUMENTS

I. SITE IDENTIFICATION

1. Memorandum to file from Mr. Alan J. Snelson, Commonwealth of Pennsylvania, re: Investigation and findings on Herb Bell Landfill, 6/1/77. P. 100001-100001.
2. Letter to Mr. Herbert Bell, O.M. Bell Sanitary Landfill, from Mr. Lawrence M. Sattler, Pennsylvania Department of Environmental Resources (PADER), re: Response to request for permission to dispose of waste asbestos from Proctor [sic] and Gamble at Bell Landfill, 3/26/79. P. 100002-100002.
3. U.S. EPA Potential Hazardous Waste Site Identification and Preliminary Assessment, 1/17/80. P. 100003-100006.
4. Site Inspection Report, Bell's Sanitary Landfill, 3/29/80. P. 100007-100019. A Potential Hazardous Waste Site Log is attached.
5. Tentative Disposition Report, Bell's Landfill, 8/27/80. P. 100020-100027. A Final Strategy Determination Report and two Tentative Disposition Reports are attached.
6. Hazardous Waste Inspection Report, TSD Facilities - Parts A and B, 6/18/82. P. 100028-100032.
7. Hazardous Waste Inspection Report, Generators - Parts A, B, and C, 6/18/82. P. 100033-100035.
8. Letter to Mr. Stanley Poss, GTE Sylvania Corporation, from Mr. James J. Young, Bureau of Solid Waste Management, re: Violations found during hazardous waste inspection, 6/23/82. P. 100036-100037.
9. Hazardous Waste Inspection Report, Generators - Parts A, B, and C, 9/16/82. P. 100038-100044. A Hazardous Waste Inspection Report, TSD Facilities - Parts A, B, and C, is attached.
10. Memorandum to file from Mr. William Walsh, U.S. EPA, re: Review of RCRA Inspection Report, 10/29/82. P. 100045-100046. A telephone conversation record is attached.
11. Report: Report of Tests for Friend Laboratory, Inc., Lab. Number 84-72052, prepared by New York Testing Laboratories, Inc., 3/23/84. P. 100047-100074.
12. Report: Report of Tests for Friend Laboratory, Inc., Lab. Number 84-72890, prepared by New York Testing Laboratories, Inc., 6/27/84. P. 100075-100119.
13. Memorandum to Mr. Richard L. Bittle, Commonwealth of Pennsylvania, from Mr. Ronald E. Hughey, Commonwealth of Pennsylvania, re: Aquatic biological investigation of the unnamed tributaries to Sugar Run that receive leachate from Bell's Landfill, 5/7/85. P. 100120-100128. The following are attached:

- a) Figure 1, Sampling station locations for an aquatic

biological investigation of unnamed tributaries to Sugar Run in the vicinity of Bell's Landfill;

- b) Table 1, Aquatic Biological Investigation Sampling Station Locations;
- c) Table 2, Aquatic Biological Investigation Water Chemistry Data;
- d) a table containing Benthic Macroinvertebrate data.

14. Letter to Mr. Russ Sloboda, NUS Corporation, from Ms. Diana Pickens, U.S. EPA, re: Revised organic review for Bell Landfill, Case 3650, 9/26/85. P. 100129-100152. The following are attached:

- a) revised quality assurance review information;
- b) sample data summary organic target compounds;
- c) two pages on analysis results for target compounds;
- d) quality assurance review information;
- e) a quality assurance review of organic analysis lab data package;
- f) a chart on target compound matching quality;
- g) quantitative calculations;
- h) a pesticide evaluation standards summary;
- i) a pesticide/PCB standards summary;
- j) a water surrogate percent recovery summary;
- k) a soil surrogate percent recovery summary;
- l) a water matrix spike duplicate recovery chart;
- m) a soil matrix spike duplicate recovery chart;
- n) tentatively identified compound sample results;
- o) a sample location map.

15. Report: Target Population Study Report, Bell Landfill, prepared by NUS Corporation, 11/5/85. P. 100153-100201.

16. Report: Site Inspection of Bell Landfill, prepared by NUS Corporation, 1/9/86. P. 100202-100308.

17. Laboratory Report for sample number 8697034, 6/16/86. P. 100309-100316. The following are attached:

- a) a special analyses report on well water;
- b) a letter regarding the results of water analysis;
- c) sample analyses on Bell Landfill;
- d) a hand-drawn sketch of water quality sampling pond;
- e) Table 1, Water Quality Analysis;
- f) a letter regarding drinking water test results.

18. Data Sample Packet, Case Name 101018, 3/10/87. P. 100317-100335. The following are attached:
 - a) a laboratory report for sample number 8755480;
 - b) two special analyses reports for sample number 2420005;
 - c) three special analyses reports dated 3/31/87;
 - d) a laboratory report for sample number 8755484;
 - e) two special analyses reports for sample number 2420013;
 - f) a laboratory report for sample number 8755481;
 - g) a special analyses report for sample number 2420007;
 - h) a special analyses report dated 3/23/87;
 - i) a laboratory analyses report for sample number 8755482;
 - j) a special analyses report for sample number 2420009;
 - k) a special analyses report dated 3/28/87;
 - l) a laboratory report for sample number 8755483;
 - m) two special analyses reports for sample number 2420011;
 - n) a special analyses report dated 3/23/87.

19. Region III Incident Notification Report, 8/25/88. P. 100336-100341. The following are attached:
 - a) handwritten notes on the discussion with Harry Daw;
 - b) handwritten notes on the briefing of Bell Landfill;
 - c) handwritten letter on the briefing with Bruce Smith;
 - d) handwritten telephone conversation record regarding health consultation.

20. Memorandum to file from Mr. Mark Donovan, Commonwealth of Pennsylvania, re: Analysis of the residential well and leachate seep samples for BNAs, VOAs, and inorganics, 6/28/89. P. 100342-100349. The results are attached.

21. Memorandum to Mr. Jack Owens, U.S. EPA, from Mr. Charles LaCerra, Roy F. Weston, Inc., re: Information on the background, site activities, and analytical results of Bell Landfill Site, 10/11/89. P. 100350-100378. The following are attached:
 - a) analytical tables on priority pollutant metals, semi-volatiles, and volatiles;
 - b) a site location map;
 - c) a Bell Landfill Site sketch;
 - d) a handwritten list of residents;
 - e) a letter and analytical results on sludge and water.

22. Sample results of lagoon sludge, 4/4/91. P. 100379-100381. A cover letter and a letter regarding the evaluation of waste streams are attached.
23. Letter to Mr. Bhupi Khona, U.S. EPA, from Mr. Albert P. Lelis, Jr., GTE Products, re: Leachability data obtained in the early 1980's on the GTE "Red Sludge," 8/7/91. P. 100382-100387. The leachability data is attached.
24. Letter to Ms. Judith Hykel, U.S. EPA, from Mr. Robert D. Fox, Manko, Gold, & Katcher, re: Summary of the understandings and process by which the settling companies and EPA agreed to divide the site into two operable units, 8/22/91. P. 100388-100393.
25. Letter to Mr. Robert D. Fox, Manko, Gold, & Katcher, from Ms. Judith R. Hykel, U.S. EPA, re: Clarification of the reasoning for completing the Remedial Investigation/Feasibility Study (RI/FS) in two operable units (OU), 10/9/91. P. 100393A-100393B.
26. Letter to Mr. Robert D. Fox, Manko, Gold, & Katcher, from Ms. Judith R. Hykel and Mr. Bhupi Khona, U.S. EPA, re: EPA's response to Robert D. Fox's comments addressing "hot spots," 2/12/92. P. 100394-100395.

II. REMEDIAL ENFORCEMENT PLANNING

1. Administrative Order by Consent for Remedial Investigation/Feasibility Study In The Matter Of: Bell Landfill, Docket #III-91-11-DC, 2/11/90. P. 200001-200053.
2. Letter to Mr. Christopher Brown, Bell Landfill, from Mr. John Rajkowski, U.S. EPA, re: Information on the stops and pick-ups at small businesses that were made for Bell Landfill, (undated). P. 200054-200054.
3. List of names and locations requested from Mr. Christopher Brown, Bell Landfill, by Mr. John Rajkowski, U.S. EPA, regarding all waste pick-ups that he made while working for Bell Landfill as a truck driver, (undated). P. 200055-200060. A handwritten list and an envelope are attached.

Athens Area School District

4. Letter to General Counsel, Athens School District, from Mr. Peter W. Schaul, U.S. EPA, re: 104(e) request for information, 8/29/89. P. 200061-200065. A certified mail receipt is attached.
5. Letter to Mr. John Rajkowski, U.S. EPA, from Mr. B. John Gee, Athens Area School District, re: Response to 104(e) inquiry, 10/4/89. P. 200066-200066.

E.I. DuPont de Nemours & Company

6. Letter to Mr. J.C. Violette, E.I. DuPont de Nemours & Company, from Mr. Peter W. Schaul, U.S. EPA, re: 104(e) request for information, 11/14/89. P. 200067-200080. The following are attached:
 - a) general facility information;
 - b) disposal site information;
 - c) a memorandum regarding waste disposal;
 - d) a status report on solid waste removal by O.M. Bell.
7. Letter to Mr. John Rajkowski, U.S. EPA, from J.C. Violette, E.I.

DuPont de Nemours & Company, re: Response to 104(e) inquiry,
12/18/89. P. 200081-200109.

8. Letter to Mr. J.C. Violette, E.I. DuPont Nemours & Company [sic], from Mr. Thomas Voltaggio, U.S. EPA, re: General Notice letter, 5/29/90. P. 200110-200115. A certified mail receipt is attached.
9. Letter to Mr. Martin Kotsch, U.S. EPA, from Mr. Jerome C. Violette, E.I. Dupont de Nemours & Company, re: Response to General Notice letter, 6/22/90. P. 200116-200116.
10. Letter to Mr. J.C. Violette, E.I. Dupont Nemours & Company [sic], from Mr. Thomas C. Voltaggio, U.S. EPA, re: Special Notice letter, 7/3/90. P. 200117-200153. A list of Bell Landfill Special Notice letter recipients, a good faith offer, and an Administrative Order By Consent for Remedial Investigation/Feasibility Study In The Matter Of Bell Landfill, Docket No. II-90-XX-DC, are attached.

The First National Bank of Bradford County

11. Letter to Mr. John Rajkowski, U.S. EPA, from Mr. Charles H. Weir, The First National Bank of Bradford County, re: Response to 104(e) inquiry, 6/6/90. P. 200154-200155. An envelope is attached.

Gowin (Walter & Dorothy and Wayne & Hannah)

12. Letter to Mr. Walter and Mrs. Dorothy Gowin from Mr. Peter Schaul, U.S. EPA, re: 104(e) request for information, 8/29/89. P. 200156-200159.
13. Letter to Mr. John Rajkowski, U.S. EPA, from Mr. Fred N. Smith, an attorney representing Mr. Walter & Mrs. Dorothy Gowin and Mr. Wayne E. & Mrs. Hannah L. Gowin, re: Response to 104(e) inquiry, 10/6/89. P. 200160-200162.

GTE North Operations Inc. or General Telephone Equipment Company

14. Letter to Mr. Stanley M. Poss, GTE Sylvania, from Mr. Stephen R. Wassersug, U.S. EPA, re: 104(e) request for information, 11/6/85. P. 200163-200165.
15. Letter to Ms. Lorie A. Acker, U.S. EPA, from Mr. Marc E. Gold, Wolf, Block, Schorr and Solis-Cohen, re: Response to 104(e) inquiry for GTE Products Corporation, 12/11/85. P. 200166-200167.
16. Letter to Mr. James R. Hobson, GTE Products Corporation, from Mr. Thomas Voltaggio, U.S. EPA, re: General Notice letter, 5/29/90. P. 200168-200173. A photocopy of a certified mail receipt is attached.
17. Letter to Mr. Martin Kotsch, U.S. EPA, from Mr. James A. Gass, GTE Precision Materials, re: Response to General Notice letter, 6/12/90. P. 200174-200174.
18. Letter to Mr. James A. Gass, GTE Products Corporation, from Mr. Thomas C. Voltaggio, U.S. EPA, re: Special Notice Letter, 7/3/90. P. 200175-200212. A list of Bell Landfill Special Notice letter recipients, a good faith offer, and an Administrative Order by Consent for Remedial Investigation/Feasibility Study In the Matter of Bell Landfill, Docket No. II-90-XX-DC, are attached.
19. Letter to Mr. Martin J. Kotsch, U.S. EPA, from Mr. Robert D. Fox, Manko, Gold & Katcher, re: Response to Special Notice letter for GTE Products Corporation, Dupont, Masonite Corporation and Procter and

Herman Rynvelds and Sons Corporation

20. Letter to Herman Rynvelds and Sons Corporation from Peter W. Schaul, U.S. EPA, re: 104(e) request for information, 8/31/89. P. 200216-200221. An envelope, a certified mail receipt, and a map of Bradford County are attached.
21. Letter to Mr. John Rajkowski, U.S. EPA, from Herman Rynveld's Son Corp., re: Response to request for information, 9/7/89. P. 200222-200232. Six invoices, a letter regarding bills, and two checks are attached.

Jay Carpet Center

22. Letter to Mr. David Rosenbloom, Jay Carpet Center and Warehouse, from Mr. Peter W. Schaul, U.S. EPA, re: 104(e) request for information and notice of potential enforcement activity, 6/22/90. P. 200233-200237. A certified mail receipt and a map of Bradford County are attached.
23. Letter to Mr. John Rajkowski, U.S. EPA, from Mr. David Rosenbloom, Jay Carpet Center, re: Response to 104(e) inquiry, 6/29/90. P. 200238-200241. A telephone message and a telephone conversation record are attached.

Masonite Corporation

24. Letter to Mr. A.W. McGowan, Masonite Corporation, from Mr. Bruce P. Smith, U.S. EPA, re: 104(e) request for information, 5/19/87. P. 200242-200245. Two certified mail receipts are attached.
25. Letter to Ms. Gerallyn Downes-Valls, U.S. EPA, from Mr. James P. Ridolfi, Masonite Corporation, re: Response to 104(e) inquiry, 6/2/87. P. 200246-200246.
26. Letter to General Counsel, Masonite Corporation, from Mr. Peter W. Schaul, U.S. EPA, re: 104(e) request for information, 8/29/89. P. 200247-200252. A certified mail receipt and a map of Bradford County are attached.
27. Letter to Mr. James P. Ridolfi, Masonite Corporation, from Mr. Thomas C. Voltaggio, U.S. EPA, re: General Notice letter, 5/29/90. P. 200253-200259. A certified mail receipt, a list of Potentially Responsible Parties (PRPs) who received General Notice letters, and concurrences are attached.
28. Letter to Mr. Martin Kotsch, U.S. EPA, from Mr. Steven J. Ginski, International Paper, re: Response to General Notice letter, 6/5/90. P. 200260-200261.
29. Letter to Mr. James P. Ridolfi, Masonite Corporation, from Mr. Thomas C. Voltaggio, U.S. EPA, re: Special Notice letter, 7/3/90. P. 200262-200299. The following are attached:
 - a) an Express Mail slip;
 - b) a list of Bell Landfill Special Notice letter recipients;
 - c) a good faith offer;
 - d) an Administrative Order By Consent For Remedial Investigation/Feasibility Study In The Matter Of Bell

O.M. Bell Trucking and Landfill

30. Letter to Mrs. Olivia M. Bell, O.M. Bell Trucking and Landfill, from Mr. Bruce P. Smith, U.S. EPA, re: 104(e) request for information, 5/19/87. P. 200300-200303. Two certified mail receipts are attached.
31. Letter to Ms. Gerallyn Downes-Valls, U.S. EPA, from Mr. Frank J. Niemiec, Davis, Murphy, and Niemiec, re: Response to 104(e) inquiry for Ms. Olivia M. Bell, 6/12/87. P. 200304-200305.
32. Letter to Mrs. Oliva [sic] M. Bell from Mr. Thomas Voltaggio, U.S. EPA, re: General Notice letter, 5/29/90. P. 200306-200311. A certified mail receipt is attached.
33. Letter to Mrs. Oliva [sic] M. Bell, O.M. Bell Trucking and Landfill, from Mr. Thomas Voltaggio, U.S. EPA, re: General Notice letter, 5/29/90. P. 200312-200317. A certified mail receipt is attached.
34. Letter to Mrs. Oliva [sic] M. Bell, O.M. Bell Trucking and Landfill, from Mr. Thomas C. Voltaggio, U.S. EPA, re: Special Notice letter, 7/3/90. P. 200318-200356. The following are attached:
 - a) an Express Mail slip;
 - b) a certified mail receipt;
 - c) a list of Bell Landfill Special Notice letter recipients;
 - d) a list of elements of a good faith offer investigation;
 - e) an Administrative Order By Consent For Remedial Investigation/Feasibility Study In The Matter Of Bell Landfill, Docket No. II-90-XX-DC.
35. Letter to Mrs. Oliva [sic] M. Bell from Mr. Thomas C. Voltaggio, U.S. EPA, re: Special Notice letter, 7/3/90. P. 200357-200395. The following are attached:
 - a) an Express Mail slip;
 - b) two lists of elements of a good faith offer;
 - c) a list of Bell Landfill Special Notice letter recipients;
 - d) an Administrative Order By Consent for Remedial Investigation/Feasibility Study In The Matter Of Bell Landfill, Docket No. II-90-XX-DC;
36. Letter to Mr. Martin T. Kotsch, U.S. EPA, from Mr. Frank J. Niemiec, Davis, Murphy, and Niemiec, re: Response to Special Notice letter for Ms. Olivia Bell, 8/27/90. P. 200396-200396.
37. Letter to Ms. Colleen Bell from Mr. Thomas Voltaggio, U.S. EPA, re: General Notice letter, 8/12/91. P. 200397-200403. A list of Bell Landfill General Notice letter recipients is attached.
38. Letter to Mr. Herbert M. Bell III from Mr. Thomas Voltaggio, U.S. EPA, re: General Notice letter, 8/12/91. P. 200404-200410. A list of Bell Landfill General Notice letter recipients is attached.
39. Letter to Mr. Mark O. Bell from Mr. Thomas Voltaggio, U.S. EPA, re:

General Notice letter, 8/12/91. P. 200411-200418. A list of Bell Landfill General Notice letter recipients is attached.

The Procter and Gamble Paper Products Company

40. Letter to Ms. Ann K. Baily [sic], Procter and Gamble Paper Products Company, from Mr. Thomas Voltaggio, U.S. EPA, re: General Notice letter, 5/29/90. P. 200419-200424. A certified mail receipt and concurrences are attached.
41. Letter to Mr. Martin Kotsch, U.S. EPA, from Ms. Ann K. Bailey, Procter and Gamble Paper Products Company, re: Response to General Notice letter, 6/14/90. P. 200425-200425.
42. Letter to Ms. Ann K. Baily [sic], Procter and Gamble Paper Products Company, from Mr. Thomas C. Voltaggio, U.S. EPA, re: Special Notice letter, 7/3/90. P. 200426-200463. The following are attached:
 - a) an Express Mail slip;
 - b) a list of Bell Landfill Special Notice letter recipients;
 - c) a list of elements of a good faith offer;
 - d) an Administrative Order By Consent For Remedial Investigation/Feasibility Study In The Matter Of Bell Landfill, Docket No. II-90-XX-DC.

Sayre Area School District

43. Letter to General Counsel, Sayre Area School District, from Mr. Peter W. Schaul, U.S. EPA, re: 104(e) request for information, 8/29/89. P. 200464-200467. A certified mail receipt is attached.
44. Letter to Mr. John Rajkowski, U.S. EPA, from Mr. Robert J. Landy, Landy & Zeller, re: Response to 104(e) inquiry for Sayre Area School District, 9/11/89. P. 200468-200469. A letter regarding the response to request for information is attached.

Terry Township

45. Letter to Mr. Robert Horton, Terry Township, from Mr. Thomas C. Voltaggio, U.S. EPA, re: Special Notice letter, 7/3/90. P. 200470-200507. The following are attached:
 - a) an Express Mail slip;
 - b) a list of Bell Landfill Special Notice letter recipients;
 - c) a list of elements of a good faith offer;
 - d) an Administrative Order By Consent For Remedial Investigation/Feasibility Study In The Matter of Bell Landfill, Docket No. II-90-XX-DC.
46. Letter to Mr. Francis D. Hardenstine, Terry Township, from Mr. Bhupi Khona, U.S. EPA, re: Special Notice follow-up letter, 10/10/90. P. 200508-200509. A certified mail receipt and an Express Mail slip are attached.
47. Letter to Mr. Glen Potter, Terry Township, from Ms. Lydia Isales, U.S. EPA, re: Special Notice follow-up letter, 10/24/90. P. 200510-200510.

48. Letter to Mr. Ray DePaola, Griffin and Dawsey, from Ms. Judith R. Hykel, re: Terry Township's decline to be part of the Administrative Order by Consent for a RI/FS, 12/6/90. P. 200511-200511.

III. REMEDIAL RESPONSE PLANNING

1. Memorandum to Mr. Stephen D. Jarvela, U.S. EPA, from Mr. Joseph A. DeAngelis, Weston-Sper, re: Preliminary Assessment Survey, 1/18/89. P. 300001-300014. The following are attached:
 - a) a Preliminary Assessment Fact Sheet regarding the file inventory summary;
 - b) a Removal Assessment Fact Sheet;
 - c) Attachment A, a list of owners, operators, generators, and transporters;
 - d) Attachment B, a list of people and their affiliation involved with Bell Landfill;
 - e) Attachment C, site information;
 - f) two site location maps;
 - g) a handwritten telephone conversation record regarding health consultation.
2. Memorandum to file from Mr. Mark Donovan, Commonwealth of Pennsylvania, re: Residential well and leachate seep samples, 6/28/89. P. 300015-300023. The sample data summary and analytical results are attached.
3. Report: Preliminary Health Assessment for Bell Landfill, Wyalusing, Bradford County, Pennsylvania, prepared by the Agency for Toxic Substances and Disease Registry (ATSDR), 1/2/90. P. 300024-300042.
4. Memorandum to Mr. Bhupi Khona, U.S. EPA, from Mr. Reginald F. Harris, U.S. EPA, re: Environmental concerns about the leachate seeps emanating from the Bell Landfill, 7/3/91. P. 300043-300043.
5. Report: Bell Landfill Ecological Risk Assessment, prepared by U.S. EPA, 10/14/93. P. 300044-300118.
6. Report: Toxicological Data Management, Bell Landfill Risk Assessment, prepared by CDM Federal Programs Corporation. 2/8/94. P. 300119-300297. A cover letter is attached.
7. Letter to Mr. Romuald Roman, U.S. EPA, from Mr. James A. LaRegina, Environmental Resources Management, Inc., re: Review comments on the Risk Assessment Report on behalf of the Bell Landfill Settling Committee, 3/23/94. P. 300119-300293.
8. Memorandum to Mr. Romuald A. Roman, U.S. EPA, from Mr. Reginald F. Harris, U.S. EPA, re: Responses to Environmental Resources Management, Inc.'s comments on the Risk Assessment, 4/4/94. P. 300294-300296.
9. Report: Draft Bell Landfill Settling Companies, Feasibility Study Report, Bell Landfill Superfund Site, prepared by Environmental Resources Management, Inc., 5/2/94. P. 300297-300427.
10. Letter to Mr. Romuald Roman, U.S. EPA, from Mr. James A. LaRegina,

Environmental Resources Management, Inc., re: Responses to EPA's Feasibility Study comments, 6/20/94. P. 300428-300432.

11. Letter to Mr. Romuald Roman, U.S. EPA, from Mr. James A. LaRegina, Environmental Resources Management, Inc., re: Revised alternative cost estimates, 6/22/94. P. 300433-300433.
12. Proposed Plan, Bell Landfill Superfund Site, Towanda, Pennsylvania, 7/5/94. P. 300434-300467.
13. Report: Final Bell Landfill Settling Companies, Feasibility Study Report, Bell Landfill Superfund Site, prepared by Environmental Resources Management, Inc. 7/7/94. P. 300468-300604.
14. Memorandum to Mr. Romuald Roman, U.S. EPA, from Mr. Bruce Rundell, U.S. EPA, re: Time frame for natural attenuation at the site, 9/8/94. P. 300605-300605.
15. Memorandum to Mr. Bruce Rundell, U.S. EPA, from Ms. Barbara Smith, U.S. EPA, re: Information on the classification of ground water, 9/12/94. P. 300606-300607.
16. Report: Bell Landfill Final Remedial Investigation Report, prepared by Environmental Resources Management, Inc., 7/30/93. P. 300608-300992.

V. CONGRESSIONAL CORRESPONDENCE/COMMUNITY INVOLVEMENT/IMAGERY

1. Letter to Mr. Morris Messersmith from Mr. William Schmieg, Friend Laboratory, Inc., re: Final part of New York water testing report for samples collected March 20, 1984, 5/11/84. P. 500001-500001. This letter refers to the report No. 11 in Section I of this index entitled, "Report of Tests for Friend Laboratory, Inc., Lab. Number 84-72052," P. 100047-100074.
2. Letter to Mrs. Diane Masters from Mr. William Schmieg, Friend Laboratory, Inc., re: Final test results from New York Testing Laboratory, 7/3/84. P. 500002-500002. This letter refers to the report No. 12 in Section I of this index entitled, "Report of Tests for Friend Laboratory, Inc., Lab. Number 84-72890," P. 100075-100119.
3. Letter to Mr. Morris Messersmith from Mr. William Schmieg, Friend Laboratory, Inc., re: Final test results from New York Testing Laboratory, 7/3/84. P. 500003-500003. This letter refers to the report No. 12 in Section I of this index entitled, "Report of Tests for Friend Laboratory, Inc., Lab. Number 84-72890," P. 100075-100119.
4. Newspaper article entitled, "Bell Landfill: Who Will Pay for Clean-Up?", (periodical unknown), 7/28/88. P. 500004-500004.
5. U.S. EPA Environmental News entitled "Study to Begin At Bell Landfill Superfund Site," 1/91. P. 500005-500007.
6. Transcript of Proceedings In Re: U.S. EPA Proposed Plan meeting for Bell Landfill Superfund Site, Operable Units 1 & 2, 7/19/94. P. 500008-500041.
7. Handwritten letter to Mr. Roman, U.S. EPA, from Mr. Ernest G. Parker, re: Comments on the situation at the Bell Landfill and request for an additional 30 days to review the plan, 7/27/94. P. 500042-500044. An envelope is attached.
8. Handwritten letter to Mr. Roman, U.S. EPA, from Mr. Ernest G. Parker

and Ms. Anna H. Parker, re: Comments on the proposed plan and concurrence with Alternative 3, 8/10/94. P. 500045-500046.

9. U.S. EPA Public Notice entitled "The United States Environmental Protection Agency Announces a 30-day Extension of the Proposed Plan Public Comment Period for the Bell Landfill Superfund Site," 8/11/94. P. 500047-500047.
10. Handwritten letter to Mr. Roman, U.S. EPA, from Mr. Ernie Parker, re: A list of documents obtained over a period of time, 8/16/94. P. 500048-500055. A chronological list of documents pertaining to the Bell Landfill is attached.
11. Handwritten letter to Mr. Roman, U.S. EPA, from Mr. & Mrs. M.J. Messersmith, re: Comments on the proposed plan and concurrence with Alternative 3, 8/17/94. P. 500056-500057.
12. Handwritten letter to Mr. Roman, U.S. EPA re: Comments on the proposed plan and concurrence with Alternative 3, 8/23/94. P. 500058-500059.
13. Handwritten letter to Mr. Roman, U.S. EPA, from The Davis', re: Comments on the proposed plan and concurrence with Alternative 3, 8/31/94. P. 500060-500063. An envelope is attached.
14. Handwritten letter to Mr. Roman, U.S. EPA, from Mr. & Mrs. Stanley D. Bundle, re: Comments on the proposed plan and concurrence with Alternative 3, 9/6/94. P. 500064-500066. An envelope is attached.
15. Handwritten letter to Mr. Roman, U.S. EPA, from Ms. Nancy Caudell, re: Comments on the proposed plan and concurrence with Alternative 3, 9/6/94. P. 500067-500069. An envelope is attached.
16. Handwritten letter to Mr. Roman, U.S. EPA, from Mr. David & Dianne Masters, re: Comments on the proposed plan and concurrence with Alternative 3, 9/7/94. P. 500070-500078. The following are attached:
 - a) a letter dated September 14, 1983 regarding sample results from Bell Landfill;
 - b) a Waste and Wastewater Report;
 - c) lab testing results;
 - d) an envelope.
17. Handwritten letter to Mr. Roman, U.S. EPA, from Mr. Russell M. Wells, re: Concurrence with the Parker Family proposals and concerns with the landfill, (undated). P. 500079-500080.
18. U.S. EPA Public Notice entitled "The United States Environmental Protection Agency Announces the Proposed Plan and Public Comment Period for the Bell Landfill Superfund Site," (undated). P. 500081-500081.

BELL LANDFILL SITE

ADMINISTRATIVE RECORD FOR THE UNILATERAL ORDER FOR ACCESS<Footnote>*

Administrative Record File available 1/3/92.</footnote>

INDEX OF DOCUMENTS

PROPERTY DOCUMENTS

1. Deed, Bell Landfill, granted to Mr. Wayne Gowin, Ms. Hannah L. Gowin, Mr. Walter Gowin, Ms. Dorothy L. Gowin, and Mr. Herbert Bell, 3/13/74. P. 1-16.
2. Petition for Grant of Letters of Administration for the Estate of Mr. Herbert M. Bell, Jr., (undated). P. 17-21. The following are attached:
 - a) an Oath of Personal Representative;
 - b) a Register of Wills;
 - c) a Renunciation form;
 - d) an Inheritance Tax Return for Insolvent Estates.
3. Notice of Filing for Appraisement for the Estate of Mr. Herbert M. Bell, 1/26/81. P. 22-29. The following are attached:
 - a) a Liabilities Appraisal;
 - b) an appraisal of a small coin collection;
 - c) an appraisal of landfill equipment;
 - d) an appraisal of used guns;
 - e) an appraisal of vehicles.
4. Copy of State Interstate Succession Law (20 PA. Cons. Stat. 301 (b)), (undated). P. 30-30.

NOTICE OF POTENTIAL LIABILITY; INFORMATION REQUESTS

5. Letter to Ms. Olivia M. Bell, O.M. Bell Trucking and Landfill, from Mr. Bruce P. Smith, U.S. EPA, re: 104(e) information request, 5/19/87. P. 31-33.
6. Letter to Ms. Gerallyn Downes-Valls, U.S. EPA, from Mr. Frank J. Niemiec, Davis, Murphy, and Niemiec, re: Response to a 104(e) information request, 6/16/87. P. 34-75. The following are attached:
 - a) three Pennsylvania Department of Environmental Resources (PADER) inspection reports;
 - b) an envelope;
 - c) a letter regarding a subject order;
 - d) two contract orders;
 - e) four PADER Land Disposal Inspection Reports;
 - f) five invoices;
 - g) a letter regarding guidelines for landfill closure;
 - h) Guidelines for Closure Plan of a Sanitary Landfill;

- i) a letter regarding a contract order alteration;
- j) a letter regarding black sludge;
- k) sampling information;
- l) O.M. Bell Sanitation Service letterhead.

7. Letter to Mrs. Olivia M. Bell from Mr. Thomas Voltaggio, U.S. EPA, re: Notice of potential liability, 5/29/90. P. 76-82. Two certified mail receipts are attached.
8. Administrative Order by Consent In the Matter of: Bell Landfill, Docket No. III-90-xx-DC, 6/25/90. P. 83-121. The following are attached:
 - a) a cover letter to Ms. Olivia M. Bell;
 - b) two good faith offers;
 - c) a list of Special Notice Recipients;
 - d) a certified mail receipt.
9. Administrative Order by Consent In the Matter of: Bell Landfill, Docket No. III-90-xx-DC, 6/25/90. P. 122-159. The following are attached:
 - a) a letter to Mrs. Olivia M. Bell, O.M. Bell Trucking and Landfill;
 - b) a good faith offer;
 - c) a list of Special Notice Recipients;
 - d) a certified mail receipt.
10. Letter to Mr. Herbert M. Bell, III from Mr. Thomas Voltaggio, U.S. EPA, re: Potential liability notice, 8/12/91. P. 160-166. A general notice letter recipient list is attached.
11. Letter to Mr. Mark O. Bell from Mr. Thomas Voltaggio, U.S. EPA, re: Potential liability notice, 8/12/91. P. 167-174. Two general notice letter recipient lists are attached.
12. Letter to Ms. Colleen Bell from Mr. Thomas Voltaggio, U.S. EPA, re: Potential liability notice, 8/12/91. P. 175-181. A general notice letter recipient list is attached.

COST DOCUMENTATION

13. Summary of U.S. EPA Expenditures, Bell Landfill, prepared by Ms. Leslie Vassallo, 6/11/91. P.182-182.

FILED ACTIONS AND SETTLEMENTS WITH RESPECT TO THE BELL LANDFILL SITE

14. Administrative Order by Consent In the Matter of: Bell Landfill, Docket No. III-91-11-DC, 12/27/90. P 183-235.

BELL LANDFILL SUPERFUND SITE ADMINISTRATIVE UNILATERAL ORDER FOR ACCESS

15. Administrative Order for Access In the Matter of: Bell Landfill, Docket No. III-91-47-DC, 10/22/91. P. 236-255.

16. Letter to Ms. Olivia M. Bell from Ms. Judith R. Hykel, U.S. EPA, re: Unilateral Order for Access, 12/24/91. P. 256-256.
17. Letter to Mr. Herbert M. Bell, III from Ms. Judith R. Hykel, U.S. EPA, re: Unilateral Order for Access, 12/24/91. P. 257-257.
18. Letter to Mr. Mark O. Bell from Ms. Judith R. Hykel, U.S. EPA, re: Unilateral Order for Access, 12/24/91. P. 258-258.
19. Letter to Ms. Colleen Bell from Ms. Judith R. Hykel, U.S. EPA, re: Unilateral Order for Access, 12/24/91. P. 259-259.
20. Memorandum to Mr. Edwin B. Erickson, U.S. EPA, from Mr. Tom Voltaggio, and Ms. Marcia E. Mulkey, U.S. EPA, re: Unilateral Order for Access, (undated). P. 260-261.
21. Memorandum to Mr. Edwin B. Erickson, U.S. EPA, from Mr. Tom Voltaggio, and Ms. Marcia E. Mulkey, U.S. EPA, re: Unilateral Order for Access and Potentially Responsible Party (PRP) Indemnification Agreement, 12/19/91. P. 262-263.
22. Indemnification and Hold Harmless Agreement between U.S. EPA and GTE Products Corporation, 11/27/91. P. 264-264.
23. Indemnification and Hold Harmless Agreement between U.S. EPA and E.I du Pont de Nemours and Company, 11/19/91. P. 265-265.
24. Indemnification and Hold Harmless Agreement between U.S. EPA and Masonite Corporation, 11/15/91. P. 266-266.

RECORD OF DECISION

BELL LANDFILL SUPERFUND SITE

DECLARATION

SITE NAME AND LOCATION

Bell Landfill Superfund Site
Terry Township
Bradford County, Pennsylvania

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the selected remedial action plan for the Bell Landfill Superfund Site (the "Site") in Bradford County, Pennsylvania which was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), as amended by the Superfund Amendments and Reauthorization act of 1986, 42 U.S.C. [Para] 9601 ("SARA"), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 C.F.R. Part 300. This decision is based upon and documented in the contents of the Administrative Record. The attached index identifies the items which comprise the Administrative Record.

The Commonwealth of Pennsylvania concurs with the selected remedy.

ASSESSMENT OF THE SITE

Pursuant to duly delegated authority, I hereby determine, pursuant to Section 106 of CERCLA, 42 U.S.C. [Para] 9606, that actual or threatened releases of hazardous substances from this Site, as specified in Section VI, Summary of Site Risks, in the ROD, if not addressed by implementing the response action selected, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The remedial action plan in this document is presented as the permanent remedy for controlling the soil and groundwater contamination at the Site. This remedy is comprised of the following components:

- @ Capping two fill areas with a Pennsylvania Department of Environmental Resources ("PADER") municipal landfill cap.
- @ Reconstructing the existing leachate collection system, and collecting leachate in new storage tanks for off-site treatment and disposal.
- @ Deed restriction preventing residential use of the Site.
- @ Removing visibly stained soils from the areas impacted by leachate (followed by confirmatory sampling), and placing these soils in areas to be capped.
- @ Long-term monitoring of ground and surface water.
- @ Landfill gas venting system.

STATUTORY DETERMINATIONS

Pursuant to duly delegated authority, I hereby determine that the selected remedy is protective of human health and the environment, complies with Federal and State requirements that legally are applicable or relevant and appropriate to the remedial action, and is cost-effective. The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable, and satisfies the statutory preference for remedial actions in which treatment that reduces toxicity, mobility, or volume is a principal element.

Because this remedy will result in hazardous substances remaining on site above health-based levels, a review will be conducted within five (5) years after the commencement of the remedial action to ensure that human health and the environment continue to be adequately protected by the remedy.

Peter H. Kostmayer
Regional Administrator
Region III

Date

<Figure>